

Tender Ref No. ACCF/Kitchen Equipment/2022-23/62

Date 24.02.2023

e-TENDER DOCUMENT

**FOR SUPPLY, INSTALLATION, TESTING &
COMMISSIONING OF “Kitchen Equipment” at State
Cancer Institute (SCI), Guwahati, Assam**

ASSAM CANCER CARE FOUNDATION
3rd floor, V.K. Trade Centre, G.S. Road, Opp. Down Town Hospital,
Guwahati – 781022, Assam Ph: +91-90852 02020
E: procurement@accf.in | W: www.assamcancercarefoundation.org

1. NOTICE INVITING RFP: -

Assam Cancer care Foundation (ACCF) invites proposals from eligible and financially sound contractor's, firms, manufacturers for supply, installation and commissioning of Kitchen equipments through **Online Bids** through e-Tender portal <https://assamtenders.gov.in/> for State Cancer Institute (SCI), Guwahati, Assam. Detailed location(s) are as mentioned below:

Sl No.	Level	Location	Address
1	L-1 Centre	SCI, Guwahati	State Cancer Institute, State Cancer Institute, Opposite GMCH, Bhangagarh, Guwahati, Kamrup Metropolitan, Assam, 781007

2. SCHEDULE OF RFP: -

Sl. No.	Particulars	Date and Time
1	Date & Time of release of Bid	Date: 24.02.2023 Time: 1300 Hrs
2	Date & Time of Pre-bid meeting(online)	Date: 02.03.2023 Time: 1500 Hrs Venue: Online at MS Team (Link shall be uploaded at ACCF website) www.assamcancercarefoundation.org
3	Due date and time for submission of Pre-bid meeting queries in writing or vide E-mail. (pls give both excel and PDF)	Date: 02.03.2023 Time: 1400 Hrs E-mail: procurement@accf.in
4	Last Date & Time of online bid Submission (Online)	17.03.2023, 1500 Hrs
5	Submission of key-documents in originals.	Date: 17.03.2023 Time: 1600 Hrs
6	Technical Bid Opening (online)	After one hour of above last date and time
7	Date of opening of Price Bid (Online)	To be informed to the qualified bidders

3. RFP FEES AND EMD DETAILS: -

Brief Description of Item	Hospital List:	Bid Security/ EMD (In Rs)	Timeline for Execution of Work	Tender Fees (in Rs)
Supply, Installation, Testing and Commissioning of "Kitchen Equipment"	SCI, Guwahati	2,00,000/-	60 days from Date of formal order	2,000/-

Note: -

- Tender fees (non-refundable) online via e-portal <https://assamtenders.gov.in>
- EMD shall be deposited through Online in tender portal i.e., <https://assamtenders.gov.in>
For FDR/BG/TDR (pledged in the name of **Assam Cancer Care Foundation**) if opted for, Originals should reach the ACCF office within the submission deadline. Any EMD received after

- the deadline will lead the bid to be rejected. Any delay by post or courier shall not be entertained.
- iii. Bidder's can quote for single or multiple locations.
 - iv. The above timelines are indicative, and ACCF reserves the right to change the timelines as per the requirement.
 - v. No extra amount shall be paid other than the contracted/quoted rate.
 - vi. **All applicants must furnish Bid Security and Processing Fee of the amount and in the manner asked for. Proposal without Bid Security & processing Fee shall be liable for rejection summarily.**
 - vii. Place of any arbitration shall be in the court's of Guwahati (Assam) only.

-s/d-

**Assam Cancer Care Foundation
Guwahati, Assam**

4. ONLINE SUBMISSION OF BID: -

- a. The Applicant is required to prepare and submit the complete proposal documents in the online e-Tender portal (i.e., <https://assamtenders.gov.in>) within due date of submission.
- b. All documents including duly filled up forms, formats, instruments and write-up that form part of the proposal should be serially numbered and signed by the Applicant or by the person(s) authorized to sign, as the case may be, on each page before scanning and uploading in the e-Tender portal.
- c. Proposal shall be typed or written in indelible ink and shall be signed by a person or person(s) duly authorized to sign on behalf of the Applicant. All pages of the proposal where entries or amendments have been made shall be initialed by the person or persons authorized to sign.
- d. Proposals shall be digitally signed as per Class 3 digital certificate by a person or person(s) duly authorized to sign on behalf of the Applicant for online submission.
- e. The Applicant is required to submit the hard copies of selected key documents of the technical proposal within due date of submission of the proposal. The hardcopies shall include following documents:
 - I. EMD (Bid Security) and Processing/RFP Document Fee (proof of payment). Payment to be made in the portal only. (For offline EMD submission pls refer **page-2**)
 - II. Declaration as per Annexure
 - III. Original Power of Attorney Document or certified copy of the Board Resolution (in case of Company) authorizing the Signatory.
- f. The Applicant can submit above hard copies either through courier or by hand (with acknowledgement) in the address given below. Non-submission of hard copies of EMD (if not submitted via RTGS/NEFT/Online) within due date and time shall be treated as no-bid and render the bid liable for rejection.

To,
The Chief Operating Officer (COO),

ASSAM CANCER CARE FOUNDATION

3rd floor, V.K. Trade Centre, G.S. Road, Opp. Down Town Hospital,
Guwahati 781022, Assam.

- g. General guidance for e-Tendering Instructions/ Guidelines for tenders for electronic submission of the tenders have been annexed for assisting the contractor/bidders to participate in e-Tendering.
- h. Registration of Contractor/bidder
Any contractor/bidder willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement system, through online bidder enrollment in <https://assamtenders.gov.in> (the web portal of Assam Govt. e Tendering). The contractor/bidder/bidder is to click on the Online Bidder Enrollment link for creating their account and register their login Id and Password.
- i. Digital Signature certificate (DSC)
Each contractor/bidder is required to obtain a Class-III Digital Signature Certificate (DSC) (only signing certificate is required) for submission of tenders.
- j. Downloading of Bid Documents: The contractor/bidder/bidder can download NIT & Bidding Documents from <https://assamtenders.gov.in>. There is also different search method for searching of published tenders. For downloading the tender documents or to view the information of a tender Digital Signature Certificate is not mandatory. DSC is mandatory only to submit the Bid.
- k. Participation in more than one work: A prospective bidder shall be allowed to participate in the job either in the capacity of individual or as a partner of a firm. If found to have applied severally in a single job all his applications will be rejected for that job.
- l. **Seeking Clarification:** Bidders have to ask any kind of clarification through "Seek Clarification" Tab available at <https://assamtenders.gov.in>. Clarification asked through any other mode will not be accepted.
- m. **Amendment of Bidding Documents:**
 - i. Before the deadline for submission of bids, the purchaser may modify the bidding documents by issuing online corrigendum. The corrigendum will appear on the website <https://assamtenders.gov.in> under "Latest Corrigendum" and email notification is also

automatically sent to those bidders who have moved this tender to their “My Tenders” area.

- ii. Any addendum thus issued shall be part of the bidding documents and deemed to have been communicated to all the bidders who have moved this tender to their “My Tenders” area. In case of any addendum/corrigendum, the system will automatically send e-mails to all bidders who have downloaded the bidding document.
- iii. To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the purchaser may extend, as necessary, the deadline for submission of bids.
- iv. In case a bidder has already submitted the bid before corrigendum & he/she will be allowed to resubmit the updated bid again without any additional cost of EMD. In that case his updated bid shall be taken for evaluation.

n. Submission of Tenders

General process of submission, Tenders are to be submitted online through the website <https://assamtenders.gov.in>. The tender is a two-cover system and the bidder has to upload their documents as specified in each cover (folder), the first folder is for Technical Proposal & the other is Financial Proposal before the prescribed date & time using the Digital Signature Certificate (DSC). The documents uploaded should be virus scanned copy duly Digitally Signed. The documents will get encrypted (transformed into non readable formats).

A. Technical proposal

The Technical proposal should contain scanned copies of the following in two covers (folders).

A-1. Statutory Cover Containing (Please make a list of required documents)

i) Technical Documents

ii) Eligibility Documents

Note: - Failure of submission of any of the above -mentioned documents will render the tender liable to be summarily rejected for both statutory & non statutory cover.

B. Financial proposal

The Financial bid will comprise the Bid Form and the Price Schedule as per format given in the bidding document. The bidder has to download the given format (“BoQ”, a.xls file) from the respective tender published at <https://assamtenders.gov>, enter rate into the specified cell and upload the same into the folder named “BOQ” on the website <https://assamtenders.gov.in> at the appropriate place.

i. Don't try to rename the file. After entering the rates only save (don't use “Save as” option) and upload it. Important: The Price Schedule are to be uploaded only in e-procurement portal; no hard copy of the same is required to be submitted. Bidder shall quote rate per piece and for destination specified in the bid.

o. Withdrawal of Bid

Bidder can withdraw their bids before online bid submission closing date. But after online withdrawal, System will not allow that bidder to participate in the same tender again.

p. Resubmission

Bidder can resubmit their bids more than one number of time before the online bid submission closing date and time. In that case his updated bid shall be taken for evaluation.

q. Help Desk

Help Desk numbers for any kind of support related to e-Procurement:
Local Language Support: 1800 2121 18866(Ext. 2)

0361 - 234 7144, 223 7188 (9:30 am to 5:30 pm)
(Language: Assamese/Bengali/Hindi/English)
24 x 7 Help Desk Number: 0120-4200462, 0120-4001002, 0120-4001005, 0120-6277787.
International Bidders are requested to prefix 91 as country code.
(Language: Hindi/English)
e-Procurement Project Manager: 6901 007390

5. SCOPE OF THE BID: -

- a. The Assam Cancer Care Foundation (ACCF) intends to procure different medical equipment, instrument, furniture and other provisional items, centrally through an open tendering process to equip all its Cancer Care Hospitals being constructed at different location in the State of Assam.
- b. Bids are invited for the supply, installation, Testing and commissioning (including training) of Kitchen equipment, the details of which are mentioned in Schedule of Requirement, as required for different cancer care hospitals being constructed by ACCF.
- c. The main objective of this tender is to select suitable bidder(s) who shall provide a high-quality goods and services including after sale service at a competitive rate. The selected bidder(s) shall be awarded the contract to commission Kitchen Equipments for the selected Hospitals within schedule time.

6. GENERAL INSTRUCTIONS TO TENDERER (GIT): -

a. Definitions and Abbreviations

Definitions: -

The following definitions, which have been used in these documents, shall have the meanings as indicated below

- i) “Government” means either Central or State or both
- ii) “Consignee” means the Hospital/Institute/Entities/ person to whom the goods are required to be delivered as specified in the Contract. If the goods are required to be delivered to a person as an interim consignee for the purpose of dispatch to another person as provided in the Contract then that “another” person is the consignee, also known as ultimate consignee.
- iii) Tender *Inviting Entity* is Assam Cancer Care Foundation.
- iv) “Contract” means the written agreement entered into between the Tender Inviting Entity and/or consignee and the Contractor, together with all the documents mentioned therein and including all attachments, annexure etc.
- v) “Day” means calendar day.
- vi) *User Institutions* are the healthcare institutions associated with ACCF for which equipment under this bid is procured.
- vii) “Earnest Money Deposit” (EMD) means bid security/ monetary or financial guarantee to be furnished by a bidder along with its bid or proposal.
- viii) “Goods” means the articles, material, commodities, furniture, fixtures, raw material, spares, instruments, machinery, equipment, medical equipment, associated software, industrial plant etc. which the Contractor is required to supply to the Tender Inviting Entity under the contract.

- ix) “Inspection” means activities such as measuring, examining, testing, gauging one or more characteristics of the product or service and comparing the same with the specified requirement to determine conformity.
- x) “**Key Documents**” are the documents as defined in the RFP to be submitted in original(hardcopy) within due date as mentioned in NIT
- xi) “Ordering Entity” OR “Purchasing Entity” means an entity entitled for issuing PO to the Contractor(s) by virtue of the contract for supply of equipment.
- xii) “Performance Security” means monetary or financial guarantee to be furnished by the successful bidder for due performance of the contract placed on it.
- xiii) “Purchasers” or “Purchasing Entities” are the entities entitled to purchase vide the contract.
- xiv) “Services” means services allied and incidental to the supply of goods, such as transportation, installation, testing, commissioning, provision of technical assistance, training, after sales service, maintenance service and other such obligations of the Contractor covered under the contract.
- xv) “Contractor” is the winning bidder with whom the contract is signed for supplied and installation of the tendered item(s).
- xvi) Tender Inviting Entity is the entity that has issued the tender inviting bids from the eligible parties. Here the tender Inviting Entity is “ACCF”.
- xvii) “User Institution” is the health facility where the equipment is installed for uses.

Abbreviations: -

S. No.	Abbreviation	Expansion
1	ACCF	Assam Cancer Care Foundation
2	AMC	Annual Maintenance Contract
3	AERB	Atomic Energy Regulatory Board
4	BG	Bank Guarantee
5	BL	Bill of Lading
6	BoQ	Bill of Quantities
7	CD	Custom Duty
8	CGST	Central Goods and Services Tax
9	CMC	Comprehensive Maintenance Contract
10	CIF	Cost, Insurance and Freight
11	CIP	Carriage and Insurance Paid
12	DP	Delivery Period
13	DDP	Delivery Duty Paid named place of destination
14	FOB	Free on Board
15	FOR	Free on Rail
16	GST	Goods and Services Tax
17	GIT	General Instruction to Tenderer
18	GCC	General Condition of Contract
19	HOD	Head of the Department

S. No.	Abbreviation	Expansion
20	INCOTERMS	International Commercial Terms as on the date of tender opening
21	IGST	Inter-state Goods and Services Tax
22	LC	Letter of Credit
23	NIT	Notice Inviting Tender
24	SCC	Special Conditions of Contract
25	SIB	Special Instruction to Bidder
26	TED	Tender Inviting Document
27	SGST	State Goods and Services Tax
28	OE	Ordering Entity
29	TIE	Tender Inviting Entity
30	WO	Work Order

7. BID DOCUMENT: -

- a. The detailed technical specifications and tender terms & conditions governing the supply, installation, commissioning and the after sales service of the tendered equipment/installations are contained in this “Bid Document”.
- b. The bid document shall be made available in the e-Tender portal for downloading. Bidder shall submit Tender Processing Fee as described in the RFP and non-submission of the same shall be one of the disqualification factors of bidding process. The documents to be submitted online is mentioned in the RFP.
- c. In the event of documentary proof as required being not enclosed, the Bid shall be liable to be rejected. All pages of the bid, except for unamendable printed literature, shall be signed by the authorized person or persons signing the bid along with the seal of the bidder.
- d. **Language of Bid:** The Bid prepared by the bidder and all correspondence and documents relating to the bid exchanged by the bidder and the Tender Inviting Entity, shall be in English language. Supporting documents and printed literature furnished by the bidder may be written in another language provided they are accompanied by an authenticated accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the Bid, the English translation shall govern.
- e. The bid (in English Language only) for the supply of equipment mentioned in the RFP shall be submitted along with detailed specifications. A technical leaflet/brochure / literature shall be furnished.
- f. The documentary evidence regarding past performance shall be submitted along with the Bid duly attested by the bidder on every page and serially numbered. Any interlineations, erasures or over writing shall be valid only if they are initialed by the person (s) signing the offer.
- g. Bidder shall submit a declaration letter as per the format given as Format T5 and copy of amendments published if any signed by the bidder or the authorized representative shall be enclosed as part of the technical bid as a proof of having read and accepted the terms and conditions of the bid document.
- h. An offer submitted in vague /ambiguous financial terms and the like, shall be termed as non-responsive and shall be summarily rejected.
- i. Clarifications to specific requests shall be responded through e-mail and general clarifications, affecting all the bidders shall be published in the official website of the Tender Inviting Entity and (or) on e-Tender Portal. However, it shall be the duty of the prospective bidder to ensure that the clarifications sought for has been properly received on time by the Tender Inviting Entity.

- j. Payment for e-Tenders (Tender Processing Fee & EMD): - The Tender Processing Fee and EMD shall be paid by the bidder in the following manner:

- i. **The Tender Processing Fee of Rs 2,000/-** (Rupees Two Thousand Only) nonrefundable shall be furnished by the bidder online only in the e-tender portal. Proof of which should be submitted along with the technical bid. Non-payment of the processing fee shall render the bid liable for rejection.
- ii. The bidder can furnish the **EMD (i.e., Bid Security)** amount of **Rs.200000/-** (Two Lakhs only) in either of the form given below: -
 - a. Fixed Deposit Receipt (FDR)/TDR duly lien marked in favour of Assam Cancer Care Foundation

or

- b. Irrevocable Bank Guarantee (BG) issued in favour of Assam Cancer Care Foundation by any scheduled bank in India as per the format given in Annexure
- c. Online payment (NEFT/RTGS/IMPS) as under: -

Beneficiary	Assam Cancer Care Foundation
Bank	State Bank of India
A/C no.	37754113832
Branch	Dispur, Guwahati
IFSC code	SBIN0003030

- d. The bidder has to submit (online) the scan copy (in PDF format) of the BG/TDR/FRD drawn in favour of ACCF towards Processing fee and EMD along with other documents as required for technical bid on or before the due date and time of submission of technical bid.
- e. However, the bidder has to submit the original instrument of the Tender EMD(s) in a sealed envelope along with other key documents as mentioned elsewhere in this document to be submitted to the Tender Inviting Entity on or before the due date of submission of “Key Documents” as mentioned in the RFP.
- f. The bidder is solely responsible to ensure that originals of these key documents reach in the office address of **ACCF** within due date as mentioned in the RFP. The bidder may choose to submit the original key documents either by hand or vide courier or postal service in the office address of the **ACCF**. However, the Tender Inviting Entity (i.e., **ACCF**) shall no way be responsible for any delay caused by the courier or postal agency. The sealed envelope containing the original key documents including original instruments (GB/DD/FDR) towards Tender **EMD** should be clearly super scribed as “Key Documents, Tender Reference No.” along with name and address of the bidder.
- g. Non- submission of **EMD** as mentioned in the RFP shall be one of the primary reasons for rejection of the offer in the first round.
- h. EMD of unsuccessful bidders will be discharged/ returned within 30 days of finalization of tender. Online submitted EMD is subject to the e-tender Portal guidelines.
- i. The successful bidder’s **EMD** will be discharged upon the bidders’ signing the contract and furnishing the performance security.
- j. No interest will be paid for the **EMD** submitted.
- k. The EMD shall be valid for a period of not less than 30 days beyond the date of bid validity (**total 210** days from bid closing date) and which may be extended further on mutual consent.
 1. The EMD will be forfeited, if a bidder: -
 - i. Misrepresents facts or submit fabricated / forged / tampered /altered / manipulated.
 - ii. Withdraws bid after opening of technical bid.
 - iii. A successful bidder, fails to sign the contract after issuance of Letter of Intent/Award

iv. Fails to furnish required performance security after issuance of Letter of Intent/Award.

m. Deadline for Submission, Modification & Withdrawal of Bid: -

- i. Bidders shall upload all the necessary documents in the e-Tender portal before the last date and time for online submission and the Tender Inviting Entity shall not be held liable for the delay.
- ii. The Tender Inviting Entity may, at its discretion, extend the deadline for submission of Bid, in which case, all rights and obligations of the Tender Inviting Entity and the bidders previously subjected to the deadline shall thereafter be subjected to the same deadline so extended.
- iii. The bidder can modify or withdraw bids submitted online before the last date & time for online submission.

n. Period of Bid Validity: -

- iv. The bid must remain valid for minimum period of 180 days from the last date of submission of bid. The Tender Inviting Entity as non-responsive shall reject a bid valid for a shorter period (less than 180 days).
- v. ACCF, if required, may request in writing seeking the consent of the bidder for an extension to the period of bid validity. In case of such extension of the bid validity the bidder shall also be requested for the extension of the bid security accordingly.
- vi. Non-compliance of agreed terms and conditions after the execution of agreement or after issuance of Work Order will lead to invoking of penal provisions and may also lead to blacklisting/debarring of the successful bidder.
- vii. Withdrawal of bid during its validity period shall result in forfeiture of **EMD**.

o. Rejection of Bid(s): -

- i. The bids shall be rejected in case the bidder fails to meet the pre-qualification criteria as specified in the RFP.
- ii. At any point of time, the Tender Inviting Entity reserves the right to reject the bid if the bidder fails to fulfill the terms & conditions of the bid document including technical specification, furnishing of relevant document & information in the required format of the tender and demonstration (wherever required) to the satisfaction of Tender Inviting Entity. Location for the demonstration will be decided as per mutual understanding and convenience of both the party. The affidavit (Format T5), Manufacturer's Form / Manufacturer's Authorization Form (Format T6 / T7 as per the case) must be uploaded with the relevant signature (s) and seals as sought in the format.
- iii. Conditional or partial acceptance of tender term and conditions or imposition of additional terms and conditions by the bidder shall be liable for rejection.
- iv. **Conflict of Interest:**

The bidders found to have conflict of interest with any other bidder(s) participated in the bid shall be disqualified and their bids shall be rejected. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:

- a. they have controlling partner (s) in common; or
- b. they receive or have received any direct or indirect subsidy/financial stake from any of them;
- or
- c. they have the same legal representative/agent for purposes of this bid;
- or
- d. they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another

- bidder;
- or
- e. bidder participates in more than one bid in this bidding process. Participation by a bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/sub-assembly/assemblies from one bidding manufacturer in more than one bid.
- v. No alternative bids shall be allowed the bid shall be liable for cancellation in case of an alternative bid.
- vi. Notices: - **ACCF** shall publish the following information on its website / e-Tender portal at the appropriate time as part of ensuring transparency in the bid process. No separate publishing will be made in newspapers. Bidders are requested to go through online website/portal time to time for updated information.
 - a) The bid notices, documents, corrigendum, addendum etc., if any.
 - b) Amendments to the bid conditions, if any, especially after the pre-bid meeting.
 - c) Results of the responsiveness of the technical bids.
 - d) List of bidders qualified for demonstration of equipment (wherever required) and reasons for rejection of unqualified bidders.
 - e) Results of the demonstration of the equipment, reasons for rejection of equipment and list of bidders qualified for price bid opening.
 - f) Final List of technically qualified bidders.
 - g) Summary of Online price bid opening
- vii. Notice, if any, relating to the contract given by one party to the other, shall be sent in writing by email or fax and confirmed by post. The procedure will also provide the sender of the notice, the proof of receipt of the notice by the receiver. The addresses of the parties for exchanging such notices will be the addresses as incorporated in the contract.
- viii. The effective date of a notice shall be either the date when delivered to the recipient or the effective date specifically mentioned in the notice, whichever is later.
- ix. Other Terms and Conditions: -
 - a) All the terms and conditions in respect of warranty/guarantee, CMC/AMC, Training, etc., mentioned shall be complied with.
 - b) **Technical Specifications and Standards:** The Goods and incidental Services to be provided by the successful bidder under the contract shall conform to the technical specifications and quality control parameters mentioned in this document.
 - c) The Contractor shall be responsible for payment of any charges due to any statutory authorities such as Income Tax, GST, any other taxes and duties.
 - d) In the event, if it found that there is some statutory deduction to be made at the source, the Tender Inviting Entity will have the right to do so.
- x. Pre-Bid Meeting
 - a. A pre-bid meeting will be convened on the date and time as specified in the Notice Inviting Tender to clarify the doubts of the prospective bids. **ACCF** reserves the right to amend the terms and conditions as well as technical specifications of the bid document after the pre-bid meeting on the basis of feedback obtained during such meeting with a view to encourage a fair and competitive bidding process.
 - b. Pre-bid meeting is called by the Tender Inviting Entity to explain briefly about the requirements as well as the terms and conditions of the bid document and to get the views of the prospective bidders, or any clarifications sought by the prospective bids on bid terms & conditions / specifications etc., as part of ensuing transparency in the bid process. Response to pre-bid queries, if any, by the Tender Inviting Entity (TIE) shall be based on the written letters from the prospective bidders. However, TIE has the liberty to response only those queries it feels necessary to response.
 - c. It is an opportunity for the prospective bidder to obtain all the details about the bid items, conditions governing the bids and also to get the explanation of any ambiguous condition

- that may be present in the bid document. The bidders are requested to submit their queries in writing (letter or E-mail) day before the pre- bid meeting.
- d. It is also an opportunity for the Tender Inviting Entity to assess the market and obtain feedback on the technical specifications/features etc., as requested/proposed by the user Institutions, so as to make amendments in the bid document, if required, on the basis of feedback and expert advice.
 - e. Failure to attend the Pre-bid meeting will not be a disqualification, but a loss of opportunity for the prospective bidders to understand about the items bided and the bid conditions.
 - f. Filled up Bids will be accepted (Online) only after the date of pre-bid meeting.
- xii. **Amendment of Bid Documents: -**
- a. At any time prior to the deadline for submission of Bid, the Tender Inviting Entity may, for any reason, modify the bid document by amendment and publish it in e- tender portal & website of ACCF.
 - b. The Tender Inviting Entity shall not be responsible for individually informing the prospective bidders for any notices published related to the bid. Bidders are requested to browse e-Tender portal or website of the Tender Inviting Entity for information/general notices/amendments to bid document etc. on a day-to-day basis till the bid is concluded before submission of bid.
- xii. **Submission of Bid: -**
- a. The bids are to be submitted on-line in two parts (i.e., technical & price bid) separately via the e-Tender portal. Each process in the e-tender is time stamped and the system can detect the time of log in of each user including the Bidder.
 - b. PART-I as TECHNICAL BID shall be submitted online (only) in the e-Tender portal with all the required documents as mentioned in the RFP.
 - c. PART II as PRICE BID (in the required Format) shall be submitted online only. The price bid format (excel sheet available in e-Tender portal) is specific to a bid and is not interchangeable. The price bid format file shall be downloaded from the e- Tender portal and quote the prices in the respective fields before uploading it. The Price bids submitted in any other formats will be treated as non-responsive. Multiple price bid submission by bidder shall lead to cancellation of bid.
 - d. The bidder should check the system generated confirmation statement on the status of the submission.
 - e. **Signing of Bid:** The bidder shall digitally sign on all statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity. If any of the information furnished by the bidder is found to be false / fabricated / bogus, the EMD/ Bid Security shall stand forfeited & shall be liable for recommending for blocking of portal registration and blacklisting.
- xiii. In addition to online submission of bids the bidder is also required to submit hard copies of some key documents, and which should reach the Tender Inviting Entity within due date and time as mentioned in NIT. Non-submission of such “Key Documents” shall render the bid liable for cancellation. In this tender the key documents are:
- a. Bidder information format
 - b. Original Instrument with respect to payment of EMD, if paid in form of BG or FDR/TDR.
 - c. Original Power of Attorney document authorizing the signatory for the Bid.
 - d. Declaration by the Bidder (As per Form T5)
 - e. Manufacturer’s Authorization Letter – in case the bidder is the authorized Importer / distributor of OEM) (As per Form-T7)
- xiv. The original key documents to be submitted to Tender Inviting Entity by the bidder in a sealed envelope clearly super scribed on it the tender details (i.e., Title and Reference No & date of the tender) and address of the Bidder within due date and time.
- xv. Resubmission of Bid: -

- a. All bid uploaded by the bidder to the e-procurement portal will be encrypted. The encrypted bid can only be decrypted / opened by the authorised openers on or after the due date and time.
 - b. Resubmission of bid by the bidders for any number of times before the final date and time of submission is allowed.
 - c. Resubmission of bid shall require uploading of all documents including price bid a fresh.
 - d. If the bidder fails to submit his modified bids within the pre-defined time of receipt, the system shall consider only the last bid submitted.
 - e. The Bidder can withdraw its bid before the closure date and time of receipt of the bid by uploading scanned copy of a letter addressing to the Tender Inviting Entity citing reasons for withdrawal. The system shall not allow any withdrawal after expiry of the closure time of the bid.
 - f. The bidder should avoid submission of bid at the last moment to avoid the system failure & the like.
- xvi. **List of Documents in Bid Submission:** The list of documents (Scanned documents to be uploaded online in PDF format) as a part of Technical Bid (PART I) is as mentioned below:
- a. Tender Processing Fee [(proof of payment)]
 - b. Format – T1 (Check List)
 - c. Format – T2 (Details of Items quoted)
 - d. Format – T3 (Details of EMD submitted Scanned copy of the TDR/FDR / BG in PDF)
 - e. Format – T4 (Details of Bidder)
 - f. Format – T5 (Declaration Form)
 - g. Format – T6 (Manufacturer's Form – in case the bidder is the OEM)
 - h. Format – T7 (Manufacturer's authorization Form – in case the bidder is not the OEM)
 - i. Format – T8 Certificate of annual audited statements for 2019-20-, 2020-21 & 2021-22 (Provisional statement of account shall not be considered) issued by Chartered Accountant.
 - j. Format–T9 (Performance Statement during the last three Years)
 - k. Copies of Work Orders & end user certificates in support of the information furnished in Format T-9
 - l. Format – T10 (Statement of deviation – Technical Specification)
 - m. Format – T11 (Para-wise compliance to Technical Specification)
 - n. Copy of the Leaflets / Technical Brochures / Product Data Sheets of the Model offered in support of the information provided in Format – T11
 - o. Copy of Quality Certificates (valid BIS/ CE/ US FDA/ IEC, etc. & ISO) of the product/ organization (Technical Specification).
 - p. Copy of the GST registration certificate and PAN
 - q. Copy of incorporation document i.e., Certificate of Incorporation Registration Certificate /Deed of Partnership.
 - r. Undertaking/ Declaration against OM F.No. 6/18/2018-PPD dated 23rd July 2020 (Annexure-VII)
- xvii. No price information to be furnished in the Technical Bid.
- xviii. **Complaint and Clarification: -**
- a. TEC of ACCF may seek clarification or additional information from the bidders in writing (Email or post), if felt necessary, based on the evaluation findings or any representation, objection or complaint as the case may be duly received from general public including those who have participated in the tender within a period of 7 days (or more as may be decided by the ACCF) from the date of opening of online technical bid.
 - b. The Representations/ Objections/ Complaints against any bidder should be self certified and accompanied by credible and foolproof evidence before submitting to the TIE.
 - c. In case of a complaint or allegation lodged by any other bidder against a participating bidder without any substantial and credible evidence but just to delay and interfere in the process, made by any other bidder participated in the bid the same shall be taken seriously

and the complainant may be disqualified for delaying and interfering in the process.

Note: Credible and fool proof evidence means, a certified copy of the order if it is a court case. If otherwise blacklisted, banned or de-recognized for any specified period, such order must appear in the website or accompanied by an authenticated copy of the order to that effect.

- d. The Tender Evaluation Committee shall first review the Representations / Objections/ Complaints against any builder received by it. In case the Representations / Objections/ Complaints are found to be correct and factual in nature before taking any action parties shall be given an opportunity of being heard, if found necessary.
- e. No Representations/ Objections/ Complaints shall be entertained, if it is not filed within the meaning and scope of above clauses and any such Representations/ Objections/ Complaints received thereafter shall be summarily rejected.

xix. Demonstration of Technical Specifications & Performance:

- a. Before opening of the Price Bid, if it is decided by the TEC for certain cases to have a demonstration of the equipment/materials/components for assessing the compliance to the technical specification as indicated in Section-VII, then the bidder shall arrange for demonstration of offered items (of the same make & model as offered in the bid) at a mutually agreed location, either directly or through authorized Dealer /Distributors, as the case may be. Bidder shall not be paid any amount towards expenditure, if any, incurred by the Bidder for organizing the demonstration.
- b. Failure to demonstrate the technical specification or performance of the items to the satisfaction of the technical committee or the TEC of ACCF, will lead to automatic rejection of the bid and the price bid of such bidders shall not be considered for opening.
- c. The right of the Tender Inviting Entity to inspect, test and, if necessary, reject the goods after its arrival at the final destination shall have no bearing of the fact that the goods have previously been inspected and cleared by its technical representatives during demonstration as mentioned above. However, the ground of rejection needs to be recorded with evidence that the item supplied are not in conformity with the technical specification as prescribed.

xx. Price Bid Opening: -

- a. The opening of the price bid shall be done online by the ACCF through its authorized representative/official and only the Price Bids of those qualified in the technical evaluation successfully.
- b. Price offered shall be in Indian Rupees only. Price should be quoted for the supply, installation, training (wherever necessary) and successful commissioning of the accessories and fulfillment of warranty/guarantee and after sales service to the satisfaction of the user Institution/facility.
- c. Basic price for each line item in the BoQ shall be includes of excise duty / customs duty, packing, insurance, installation, forwarding/transportation (upto the site) with onsite warranty, calibration charges, if any, and excludes GST.
- d. The bidders shall offer the price which shall be inclusive of all the accessories/components to be supplied along with the equipment/installations as mentioned in the technical specification.
- e. CMC (Comprehensive Maintenance Contract) Rates as per price schedule (if asked for)
- f. Bidder shall also quote CMC / AMC rates (exclusive of GST) for a period as prescribed, post comprehensive warranty period. The Rates of CMC for the prescribed period shall be shown separately in the respective columns of price bid format. GST shall be paid on applicable rates as per the correct HSN Code.
- g. The total AMC/CMC rates offered shall be considered, if specifically mentioned, while tabulating and comparing prices for deciding the lowest qualified bidder.
- h. In case if the respective columns of CMC are left blank in the prescribed price bid format, then it shall be considered as zero.
- i. The bidder need not quote for the CMC/AMC rate, if the Tender Inviting Entity has already

mentioned a predetermined rate (as certain percentile of the contract price) to be adhered by the Contractor.

xxi. Price Reasonableness: -

- a. The bidder shall ensure that the rates quoted for each item are reasonable and are at par with the rate it has supplied to any other buyer in India or outside, for same or equivalent item (make, model and specification) in last one year.
- b. ACCF is not bound to accept the lowest evaluated responsive bid, if the quoted price is found to be unreasonable. The TIE will have following options available with it in case the price quoted by the preferred bidder (L1 price) is found to be unreasonable. Cancel the tender and go for a fresh bid with or without revised terms and conditions.
- c. Seek clarification on quoted price from the L1 bidder and negotiate for an acceptable price, seeking a revised price bid from the L1 Bidder.

xxii. Award of Contract: -

The contract will be awarded to the lowest evaluated responsive bidder(s), adjudged vide the financial bid evaluation of all the technically qualified bidders provided:

- a. L&T Limited (the principal construction contractor of the project) refuses to execute tendered item on its own at L1 price and
- b. If ACCF is not convinced with the price offered and found it unreasonable.
- c. Before expiry of the bid validity period, the Tender Inviting Entity will notify the successful bidder(s) in writing or by E-mail that its bid, has been accepted, also briefly indicating therein the essential details like location, description, specification and measurement of the installation/items and the prices accepted. This notification is undertaken by issuing a Letter of Intent (LOI) by the Tender Inviting Entity.
- d. Tender Inviting Entity reserves the right to call for matching of L1 rates from L2/L3/L4...rates to have fall back option and may award the contract to matched L1 bidder.
- e. The successful bidder shall deposit required performance security amount and sign the contract within prescribed timeline, failing which the EMD may be forfeited and the award may be cancelled.
- f. The Notification of Award shall constitute the initiation of the Contract. This contract shall be valid for 1 year from the date of issue of LoI or from the date of signing of the contract agreement, whichever is later. Rate validity can be increased for further period on mutual consent.
- g. The successful bidder shall execute a contract (in the format as given in Annexure-I) with the Tender Inviting Entity (i.e. ACCF) for ensuring satisfactory supply, installation, commissioning and the after sales service/support during the warranty period.
- h. Promptly after notification of award, within 10 days from the date of intimation or issue of LoI, the successful bidder shall execute the contract (format given in Annexure I) on Rs.100/- stamp paper purchased in the name of the successful bidder, duly signed and dated, to the Tender Inviting Entity by post or in person along with performance security.
- i. The successful bidder, wherever applicable, 3 (three) months prior to the completion of Warranty Period, shall execute/extend the contract for Comprehensive or Annual Maintenance (CMC/AMC) with the Tender Inviting Entity, and which shall commence from the date of expiry of the warranty Period. However, TIE reserves the right to enter into the AMC/CMC with the Contractor.

8. Tender Details: -

S. No	Item	Descriptions		
1	Tender Reference No	ACCF/Kitchen Equipment/2022-23/62		
2	Details of the item	Brief Description	Locations/Hospital	EMD/Bid Security

S. No	Item	Descriptions		
	tendered.	Supply, installation and commissioning of “Kitchen Equipment” in State Cancer Institute (SCI), Guwahati, Assam.	Hospitals: 1.SCI, Guwahati, Assam	Rs. 200000/-
3	Validity of Bid	Bids should be valid for a minimum period of 180 days from the last date of submission of Bid.		
4	Validity of Bid Security /EMD	30 (thirty) days beyond the final bid validity date (total 210 days).		
5	Performance Security	5% of the contract/order value (from the successful bidders). Bidder is required to submit 2% of the rate contract value initially and balance 3% at the time of issue of site wise Purchase/Work Order against each PO of that PO value. (Any adjustment will not be considered)		
6	Validity of Performance Security	valid for 36 months.		
7	Price Validity	Price shall remain valid for the entire contract period of 1 year and no price revision shall be allowed during the contract period. Price validity may be increased beyond 1 year on mutual consent.		
8	Warranty	24 months		

9. SCHEDULE OF REQUIREMENT: -

Technical Specifications of Kitchen Equipment:

9.1. REFRIGERATION SYSTEM

9.1.1. SCOPE OF WORK

This section of the Specification covers refrigeration systems. The work shall include, but not be limited to, the supply, delivery to site, installation, testing, commissioning and twelve (12) months free maintenance and warranty of the overall refrigeration system comprising condensing units, evaporator units, all associated works and items including the following:

- Refrigerant pipework complete with solenoid valves, thermostat, expansion valves, hand valves, sight glass, filter-dryer, oil separators, piping insulation and refrigerant for each system. Distribution for condensate water piping within the compressor room.
- Condensate drain with exterior traps for coldrooms.
- Electrical works complete with wiring, with central control panels and local control panels with fault display panels, as required.

The omission from these specifications of express reference to any parts necessary for the complete installation is not to be construed as releasing the Kitchen contractor from responsibility for furnishing such parts.

System design should conform to all local codes, laws, and regulation. In addition, the Safety Code for Mechanical Refrigeration (ASA B9.1-1958) and the Code for refrigeration Piping (ASA B31.5-1962) should be adhered to.

9.1.2. DESIGN CONDITIONS

- The outdoor design condition shall be taken as 32°C DB and 28°C WB. The cold room temperature shall be as listed in the schedule attached.
- The selection of the appropriate evaporators and condensing units to suit the coldrooms shall be based on the information given in the schedule.
- All refrigeration equipment for coldrooms shall operate on CFC free refrigerants, with O zone Depletion Potential of 0.
- All refrigeration equipment shall be water-cooled and condensers shall be sized for water entering at 31°C unless

specified otherwise and water temperature difference shall not exceed 8°C.

9.1.3. REFRIGERATION EQUIPMENT

The CONTRACTOR shall supply and install the entire refrigeration system and shall ensure that the equipment selected must conform to the following specifications:

a) Compressor Units-

The compressor unit packages shall consist of:

- i. Unit framework and compressor base plate assemblies shall be of welded structural channel steel construction, be primed before and after fabrication and secure a coat of rust inhibiting grey machinery enamel.
- ii. All components and factory piped sub-assemblies are to be rigidly mounted to reduce the possibility of refrigerant line fatigue failures.
- iii. Units shall be factory piped, wired and tested. Suction and discharge manifolds shall be factory fabricated. Suction line filters, liquid line filter driers, oil separators, oil reservoir and float controlled oil supply system shall all be factory fabricated and mounted.
- iv. The reciprocating motor compressors shall be of accessible hermetic construction suitable for use on CFC free refrigerants with built in 3 phase motor overload protection. The compressor unit shall be equipped with oil level sight glass, oil sump drain plug, internal shaft driven oil pump, back seating suction and discharge valves, manual reset high pressure and oil failure switches. Low temperature units shall be equipped with head cooling fans. Since the motor is cooled by suction gas, a full flow refrigerant drier must be utilized on the liquid line to prevent acidification of the refrigerant due to contact with moisture.
- v. The location and installation of reciprocating compressor shall be in accordance with local and other code requirement. The equipment shall be manufactured and rated in accordance with applicable sections of ARI, ASME, ANSI B-9, ASHRAE and NEC. Factory testing shall include a complete electrical continuity check and system leak test (400 psi high side and 150 psi low side). Units shall be shipped with a dry nitrogen charge.

b Water Cooled Condensers

1. Relevant sections of the safety code for Mechanical Refrigeration, under the rules and regulation of ASA Project B9, shall be strictly adhered to ensure the safe operation of shell and tube water cooled condensers.

i The shell and tube water cooled condensers not exceeding an internal diameter of 6" irrespective of pressure, shall be listed either individually or as part of refrigeration equipment by the Underwriters Laboratory having a follow up inspection service. All water cooled condensers shall be pressure tested to withstand pressure of up to 650psi, and provided with pressure relief valve of 400psi.

- ii. Condensers exceeding an internal diameter of 6" shall comply with the rules of ASME Boiler and Pressure Vessel code covering the requirements for the design, fabrication and inspection during construction of unfired pressure vessels. In addition to this, the following certification is necessary confirming the necessary inspection and tests:

Net Internal Volume of less than 1.5 cu. ft.	-	UM certification
		UL recognition

Net Internal volume of over 1.5 cu. ft.	-	National Board Certification
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2. The condenser shall feature all copper water channels and epoxy coated tube sheet and water plate to prevent pitting caused by galvanic action. All models shall have easily removable end plates to facilitate cleaning.
3. The MEP contractor shall provide an incoming and return condensate water supply with a valve to the general location of the water cooled condenser. In the case of multiple water cooled condensers

located within the same location, the CONTRACTOR will provide the internal distribution for the condensate water pipes to the individual condensers. Each condenser shall have its own isolating valve. The CONTRACTOR shall also provide an interlocking system between the incoming condensate piping system to all compressors with a flow switch, so that when the water flow is disrupted, the compressors shut down immediately.

4. For this project, the condensing units for all the cold rooms except Cold Room R-22, R-23 and R-24 are located at a centralised condensing unit room at the Basement. The condensing units for R1, R2 and R3, are located above their respective cold rooms. The CONTRACTOR to include costs of condensing unit supports and mounting kits in scope of works.

c Unit Cooler

All unit coolers shall consist of:

- i. Low noise level axial fans with sound levels ranging from 57 dB generated by one fan unit to 63 dB produced by 6 fan units as measured on the "A" scale, 6 feet in front of the unit cooler.
- ii. The fan motor shall be totally enclosed with internal overheat protection and life time lubricated ball bearings. Fan sections shall be individually compartmentalized to prevent reverse rotation in event of motor failure.
- iii. Four row deep coils with 12mm OD staggered copper tubes mechanically expanded into corrugated aluminum fins spaced by tube collars. In view of the fact that wide fin spacing reduces air blockage caused by frost, 4-5 fin/inch spacing is to be used for low temperature applications and 6-7 fin/inch for medium temperature applications.
- iv. Housing and drain pan to be constructed of textured corrosion resistant aluminum.
- v. To maximize storage space, ceiling mounted unit coolers shall be used. Air shall be drawn from the back of the cooler and directed out through the front.
- vi. For best operation, the units should be located away from doors or be placed in such a way that air from an open door cannot be drawn directly into the unit coil. Units must also be installed to provide proper drainage of condensate water. The maximum height of coolers shall not exceed 420mm. Units are to be located 230mm from walls for best results.

9.1.4. DEFROSTING CYCLE

Electrical defrosting stainless steel tubular heaters manufactured according to appropriate standards shall be fitted for all low temperature coolers. Defrost cycles are to be time clock/initiated and temperature terminated by a factory mounted adjustable thermostat which creates a fan restarting delay preventing warm air and condensate from being discharged into the refrigerated air space. The timer is to have a fail-safe feature which is to affect a second termination if the thermostat should fail. During off cycle, the crankcase heater installed in the compressor shall be energized to prevent liquid slugging and foaming in the crankcase.

9.1.5. REFRIGERATION ACCESSORIES AND CONTROLS

Each system shall consist of the following:

- Filter drier
- sight glass with moisture indicator
- liquid line solenoid valve c/w coil
- liquid line shut-off hand valve
- thermostatic externally equalized expansion valve
- suction accumulator
- by-pass valve for maintenance of filter drier
- defrost timer (for freezer rooms only)
- suction line U-trap
- room thermostat
- electric control panel
- hi-lo pressure switch
- Condenser flow sensing control interlocked to start/stop switch
- Fault display panel
- Pressure and temperature gauges in condenser water in/out lines
- Pressure gauge on hi-side of compressor
- High pressure relief valve

9.1.6. REFRIGERANT PIPEWORK, VALVES AND FITTINGS

9.1.7. Condensate Water Piping

The condensate should be drained to the nearest floor trap/drain. The condensate drain pipe shall be galvanized 'B' type and insulated with 25 mm "Armaflex" to prevent "sweating". The length of drain lines within the refrigerated space should be kept as short as possible. The drainline should be pitched downwards 1" per ft and should exit from the cooler as quickly as possible. A trap in the drain line must be provided and should be located outside of the refrigerated space. Pipe heaters should be fitted onto the condensate drainpipes in the freezer coldrooms to prevent freeze-up, to be energized continuously. A heat input of 20 W/ft of drain line for -18°C and 30 W/ft for -29°C should be satisfactory.

9.1.8. Refrigeration Piping

1. Materials for piping and fittings

- Unless otherwise specified all refrigeration piping shall be refrigeration grade Type L or Type K hard drawn degreased sealed copper tubing. Alternate proposals may be submitted for the use of Type L refrigeration grade soft copper tubing for long under floor runs only providing runs are straight and free from kinks and bends.
- Extreme care shall be taken to keep all refrigerant piping clean and dry. Each length shall be inspected and swabbed with a cloth soaked in refrigerant oil if any dirt, filings or visible moisture are present.
- All sweat type fittings shall be wrought copper or forged brass. All elbows and return bends shall be of the long radius type. If flare fittings are, they shall be of the frost proof type (except on connections not subject to condensation) and constructed of forged brass. Soldered joints are preferred and shall be used wherever practical.

2. Installation

- All refrigerant lines shall be sized in accordance with good industrial practice to give pressure drops and in conformity to the requirements of the system capacity.
- Branch and main suction lines shall be sized to maintain adequate velocities to ensure proper oil return to the compressor under minimal load conditions at the lowest saturation suction pressure to be expected.
- Tubing shall be installed in a neat, workmanlike manner with horizontal runs sloped towards the compressor at a rate of 254mm per 1.6m.
- Where vertical rises of more than 1.52m occur in a suction line, the riser shall be trapped at the bottom.
- Where a branch suction line enters a main suction line, it shall enter at the top.
- Piping shall be arranged such that refrigerant or oil cannot drain from the suction line into the coil.

All suction lines shall be insulated as follows :

- a) For high room temperature applications, 50mm Armaflex or equal.
- b) For low room temperature applications below -18°C and below, Polyurethane insulation or equal. All insulation shall fit the tubing snugly and shall be applied and sealed in accordance to manufacturer's induction to prevent any formation of condensation on the outside of the insulation.
- c) Before the refrigerant piping circuit is sealed up, the CONTRACTOR shall carry out pressure testing, tightness testing and flushing of the system to assure that the inside of the pipe is clean. All refrigerant pipe shall be protected by aluminum sheathing encasing the insulation.

All wiring associated with this installation shall be heat and moisture resistant type.

9.1.9. Vibration isolation of piping system.

The CONTRACTOR is to incorporate into his refrigeration piping design, features that would minimize effects of

vibration so as to prevent physical damage to piping and transmission of noise through the building construction. The piping must be supported securely at intervals of not more than 2.44m using isolated sheath pipe hangers or any isolation hanger as permitted by local standards. Straps and rods attached directly to pipes should not be used.

Flexible metal hoses are to be used and located nearest the vibrating machine at suction and discharge lines in directions parallel to the crankshaft.

9.1.10. TESTING & COMMISSIONING

9.1.11. Leak test

After completion of the piping installation work, the entire system shall be leak tested. All piping and fittings shall not be painted nor insulated until the completion of the leak test. All weld lines are to be cleared of any slag prior to or during the leak test. The tests shall be carried out as follows:

- The complete system shall be partially charged to a pressure of approximately 35 psig and then further pressurised using an inert gas such as dry nitrogen to not more than 175 psig for testing purposes.
- Repair of leaks should only be carried out after the system is vented of the test pressure gas to 0 psig. Otherwise any heating of pipes could cause the refrigerant within to break down into toxic gases.
- Additional tests shall be carried out on piping that have been subjected to any work. As a final test, to ensure leak tightness, the entire system is to be p;0 depressurized to 1 psig sealed and left for not less than 24 hrs.

Conditions

- Oxygen or air must not be used for pressurizing the system.
- Rotation machinery shall not be included in the tests.
- All test pressure for conducting of pressure tests shall be in accordance with the standards set by Underwriter's Laboratories Inc.

Evacuation

On conclusion of the leak tests, evacuation shall be carried out to completely remove air from the system. For this purpose, a triple evacuation shall be used; twice to 1500 microns and the final time to 500 microns. The vacuum should be broken to 2 psig each time with the same type of refrigerant to be used in the system.

9.2. Equipment Specifications:

9.2.1.EL. BOILING PAN+AUTO.FILL. -100L-EASYLINE

ITEM NO: ITEM NO- LK43				EL. BOILING PAN+AUTO.FILL. -100L-EASYLINE			
QUANTITY: 1							
MAKE: ELECTROLUX / MKN / GARLAND							
MODEL: EBE100AWF/ 232189							
ALTERNATEMAKE: EQUIVALENT							
SIZE							
Width:		Depth:					
1068 mm		780 mm		900 mm			
CAPACITY		100 ltrs					
M.E.P REQUIREMENT				SPECIFICATIONS			
PLUMBING:				Stainless steel construction with the deep drawn pan with rounded edges manufactured from AISI 304 stainless steel. Pan can be tilted beyond 90° to completely empty the food. Motorized tilting with tilting axis located in the			
Cold	Ø	½"					
Hot	Ø	½"					

Waste	Ø	½"		middle of the pan to keep the pouring lip high and allow tall vessels to be filled. Automatic water filling of the steam generator. • Electric heating elements submerged directly in the water of the jacket. • Food is uniformly heated via the base and the side walls of the pan by an indirect heating system using integrally generated saturated steam at a temperature of 112°C in a jacket with an automatic deaeration system. Safety valve avoids overpressure of the steam in the jacket. Safety thermostat protects against low water level. Max pressure at 0,5 bar. • High thermal input and fast heat up. Electromechanical control. Lower temperate outside the panels. IPX5 water protection. For freestanding installation one left column is necessary for each unit.
ELECTRIC:				
Power	15.0kw			
Voltage	400v/50-60hz/3ph			
EXHAUST				
GAS:				
BTU/h	NA			
KW	NA			
Con.		NA		
ACCESSORIES:				
• Left leg/column (to be ordered always one unit for single or multiple installation) PNC 928000 • Floor fastening kit (fastening is integrated in the floor - for a correct installation you need 1 for each pan plus 1 for the left column) PNC 928001 • Kit for a correct and easy positioning and installation of the pan (for a correct installation you need 1 for each pan) PNC 928002 • Floor fastening kit (fastening on the floor surface) PNC 928003 • Measure stick 100lt PNC 928008 • Strainer 8mm holes 100lt PNC 928012				
SPECIAL NOTE:				

9.2.2. 100LT EL. BRAISING PAN-DUOMAT BOTTOM AUT.

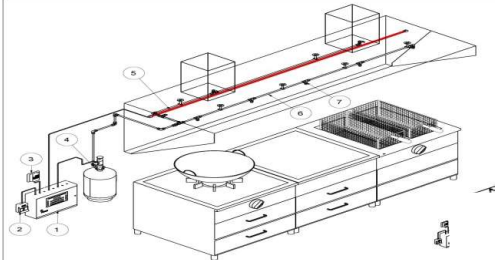
ITEM NO: ITEM NO- LK44				100LT EL. BRAISING PAN-DUOMAT BOTTOM AUT.			
QUANTITY: 1							
MAKE: ELECTROLUX / MKN/GARLAND							
MODEL: E9BREJDPFM/ 391150							
ALTERNATEMAKE: EQUIVALENT							
SIZE							
Width:		Depth:					
1000 mm		930 mm		850 mm			
CAPACITY		100 ltrs					
M.E.P REQUIRMENT				SPECIFICATIONS			
PLUMBING:				- Unit to be Electrolux 900XP Electric Bratt Pan 100 liter capacity. - Electric characteristics to be ___ 400 V. Infrared heating elements positioned below the cooking surface. Unit shall have Duomat cooking surface for roasting, browning, stewing, preparation of sauces, sautéing, boiling and braising. - Unit can be installed on cantilever systems. Unit shall include mechanism to automatically tilt the pan and double-skinned closing lid in stainless steel. Cooking temperature can be set through thermostat and the energy input through an energy regulator. - Exterior panels of unit in Stainless steel with Scotch Brite finish. Unit has right-angled side edges to allow flush-fitting junction between units.			
Cold	Ø	¾”					
Hot	Ø	NA					
Waste	Ø						
ELECTRIC:							
Power		17.0kw					
Voltage		380-400v/50-60hz/3ph					
EXHAUST							

GAS:				
BTU/h	NA			
KW	NA			
Con.		NA		
ACCESSORIES:				
SPECIAL NOTE:				

9.2.3. COMPENSATING EXHAUST HOOD WITH CAPMAX FILTERS

ITEM NO: LK04				COMPENSATING EXHAUST HOOD WITH CAPMAX FILTERS			
QUANTITY: 1							
MAKE: HALTON/ CHEFMATE / VIANEN							
MODEL: WMCH-4							
ALTERNATE MAKE: EQUIVALENT							
SIZE							
Width: 4450 mm		Depth: 1200 mm		Height: 600 mm			
M.E.P REQUIRMENT				SPECIFICATIONS			
PLUMBING:				• Material of construction SS 304 – 1 mm Thick • Leak-proof SMACNA Compliant Construction • Compliant to ASTM F 1704 for Capture and Containment Performance • Compliant to ASHRAE standard 154, NFPA – 96 • Seamless welded finish for watertight construction • No sharp edges and well ground surface for human safety • High Efficiency CapMax® Baffle Filters compliant to NFPA 96 • Filter Inclination as per SMACNA for proper oil flow and collection • Vapour proof LED fitting with toughened glass with 6500 K Colour temperature • Sliding Damper for fine balancing of Air flow • Pressure Sensing ports to monitor plenum pressure • Ready to connect junction pin for LED light connection • Peripheral jet SlipStream to contain fumes within the Hood as per ASHRAE 154 • Perforated front in Supply plenum for discharging low velocity make-up air • Perforated Man cooling grill for Human Comfort			
Cold	Ø	NA					
Hot	Ø	NA					
Waste	Ø	NA					
ELECTRIC :							
Power	0.6 kw						
Voltage	220v/50hz/1ph						
EXHAUST							
4000 CFM @ 150 Pa							
FRESH AIR THROUGH HOOD							
3400 CFM @ 80 Pa							
TFA THROUGH CEILING							
200 CFM							
ACCESSORIES:							
SPECIAL NOTE:							

9.2.4. FIRE SUPPRESSION SYSTEM FOR EXHAUST HOOD

ITEM NO: ITEM NO- LK12				FIRE SUPRESSION SYSTEM FOR EXHAUST HOOD			
QUANTITY: 1							
MAKE: SWASTIK SYNERGY / ANSUL							
MODEL: CONFERNO							
ALTERNATEMAKE: EQUIVALENT							
SIZE: As per BoQ							
Width:		Depth:		Height:			
CAPACITY							
M.E.P REQUIREMENT				SPECIFICATIONS			
PLUMBING :				- Provide an automatic, Wet Chemical Fire Suppression System with provision of Manual Pull Station to be located in a path of egress at a maximum height of 60 inches above the floor. - Unit to be provided with nozzles with metal blow off caps for equipment protection, plenum protection and duct protection. - Should provide 100% protection as required by codes, standards, national, state, and local requirements. - Provide Heat Sensing Cable running through entire plenum covering duct cut outs. - Stainless steel pipe drops to be provided to the discharge nozzles and plenum both. Discharge nozzles should not exceed 650mm from each other. - The system, including all of its components, shall be UL Listed - Standard 300 - Automatic actuation shall be initiated by Heat Sensing Cable. - Control Panel shall have provision for indication of any faults in the system & event data logger. - Battery backup shall be provided in the Control panel. UNIT SHOULD BE INTEGRATED WITH THE FOLLOWING: - GAS SHUT OFF VALVE - ELECTRICAL EQUIPMENT UNDER THE HOOD - HOOD LIGHT (INCASE THE SAME IS IN A NON FIRE RATED ENCLOSURE) - HVAC SYSTEM & BMS SYSTEM			
Cold	Ø	NA					
Hot	Ø	NA					
Waste	Ø	NA					
ELECTRIC :							
Power	0.50 k.w.						
Voltage	220v-50c-1p						
EXHAUST							
DETAILS :							
No. of nozzles	12 approx						
Plenum Nozzles	02						
Duct cut-out	04						
SPECIAL NOTE:							
- Fire suppression system should be installed by a certified vendor and all testing and commissioning certificated needs to be provided. - Minimum of five (05) years maintenance contract should be there between the client and the fire Suppression system vendor for periodic maintenance inclusive cylinder and accessories as per fire norms. - Detail provided in this specification in terms of number of Nozzles, ducts cut outs, distance of unit etc. needs to be coordinated and verified by Vendor. Any Deviation from above mention and specification to be brought to the notice else it is expected that the vendor in following complete specification as mentioned above. - False ceiling at periphery of hood at 2650 mm from FFL							

9.2.5. 3-DOOR REFRIGERATED COUNTER

ITEM NO: ITEM NO- CK10// TK03				3-DOOR REFRIGERATED COUNTER A304 R290			
QUANTITY: 1+1+1							
MAKE: ELECTROLUX/KOLDTECH /WILLIAMS UK							
MODEL: AC1R3UAAA3							
ALTERNATEMAKE: EQUIVALENT							
SIZE							
Width: 1803 mm		Depth: 700 mm		Height: 850 mm			
CAPACITY		259 ltrs					
M.E.P REQUIREMENT				SPECIFICATIONS			
PLUMBING :				3 doors refrigerated counter. Built-in refrigeration unit. - External doors, front, back and side panels in AISI 304 Stainless Steel. - Internal panels and fittings in AISI 304 Stainless Steel. Worktop in AISI 304 Stainless Steel. Ventilated. High-density expanded polyurethane insulating foam, 60 mm in thickness, with cyclopentane injection for long-term insulation and energy saving. - Digital control panel. Completely automatic defrosting and automatic evaporation of defrost water. - Temperature range: -2/+8° C. CFC and HCFC free. R290 refrigerant gas for the lowest environmental impact - CFC and HCFC free. - Self closing doors and magnetic door seal to guarantee perfect closure.			
Cold	Ø	NA					
Hot	Ø	NA					
Waste	Ø	NA					
ELECTRIC :							
Power		0.46kw					
Voltage		220-240v/50-hz/1ph					
EXHAUST							
GAS:							
BTU/h		NA					
KW		NA					
Con.			NA				
ACCESSORIES:							
SPECIAL NOTE:							

9.2.6. COMPENSATING EXHAUST HOOD WITH CAPMAX FILTERS

ITEM NO: LK04/ LK12/ LK18/ LK42				COMPENSATING EXHAUST HOOD WITH CAPMAX FILTERS			
QUANTITY: 1							
MAKE REVAC/SSS/ANSUL/Swastik synergy/Cease fire							
MODEL:							
ALTERNATE MAKE: EQUIVALENT							
SIZE: As per BoQ							
Width:		Depth:		Height:			
M.E.P REQUIRMENT				SPECIFICATIONS			
PLUMBING:				• Material of construction SS 304 – 1 mm Thick • Leak-proof SMACNA Compliant Construction • Compliant to ASTM F 1704 for Capture and Containment Performance • Compliant to ASHRAE standard 154, NFPA – 96 • Seamless welded finish for watertight construction • No sharp edges and well ground surface for human safety • High Efficiency CapMax® Baffle Filters compliant to NFPA 96 • Filter Inclination as per SMACNA for proper oil flow and collection • Vapour proof LED fitting with toughened glass with 6500 K Colour temperature • Sliding Damper for fine balancing of Air flow • Pressure Sensing ports to monitor plenum pressure • Ready to connect junction pin for LED light connection • Peripheral jet SlipStream to contain fumes within the Hood as per ASHRAE 154 • Perforated front in Supply plenum for discharging low velocity make-up air • Perforated Man cooling grill for Human Comfort			
Cold	Ø	NA					
Hot	Ø	NA					
Waste	Ø	NA					
ELECTRIC:							
Power		1.2 kw					
Voltage		220v/50hz/1ph					
EXHAUST							
7200 CFM @ 150 Pa							
FRESH AIR THROUGH HOOD							
4800 CFM @ 90 Pa							
FRESH AIR THROUGH CEILING							
1600 CFM							
ACCESSORIES:							
SPECIAL NOTE:							

9.2.7. PLANETARY MIXER-ELECTRONIC

ITEM NO: MG2	PLANETARY MIXER-ELECTRONIC 60LT 400/3
QUANTITY: 1	

MAKE: ELECTROLUX /SALVA/HOBART					
MODEL: XBE60/ 600282					
ALTERNATEMAKE: EQUIVALENT					
SIZE					
Width: 685 mm		Depth: 1050 mm		Height: 1445 mm	
CAPACITY		60 ltrs			
M.E.P REQUIREMENT				SPECIFICATIONS	
PLUMBING :				- Floor model, suitable for all kneading, blending and whipping operations. Body in non-corrosive material with 18/8 (AISI 302) 60-liter stainless steel bowl. - Powerful asynchronous motor (4000 W) with electronic speed variator (10 speed levels from 20 to 180 rpm). - Removable and dismantled solid safety screen - made of a bisphenol-A free (BPA) copolyester. - Bowl detection device allows the mixer to switch on only when the bowl and the safety screen are properly installed and positioned together. - Motor and mechanism are protected against overloading. - Heavy duty safety screen. Control panel with timer and bowl lighting. - Geared motor drive system to raise and lower the bowl. - Supplied with 3 tools: stainless steel spiral kneading hook, cast aluminum paddle and stainless steel wire whisk..	
Cold	Ø	NA			
Hot	Ø	NA			
Waste	Ø	NA			
ELECTRIC :					
Power		4.0kw			
Voltage		380-440v/50-hz/3ph			
EXHAUST					
GAS:					
BTU/h		NA			
KW		NA			
Con.		NA			
ACCESSORIES:					
SPECIAL NOTE:					

9.2.8. WALK-IN COOLER

ITEM NO : WIC03/ WI04/ BS19/ GD06	WALK-IN COOLER
QUANTITY: 1	
MAKE : TRUFROST / CELFROST/ BLUESTAR	
MODEL: Customized	
ALTERNATEMAKE: EQUIVALENT	
SIZE: As per BoQ	

Width:		Depth:		Height:		
CAPACITY						
M.E.P REQUIRMENT				SPECIFICATIONS		
PLUMBING :				PUF Panels 60mm thick . Wall to Wall, Wall to Floor, Wall to Ceiling with <i>Built-in round-off wall corners</i>. “T” joint cam-lock interlocking for two coldooms joining together. No use of flashing/riveting to join two rooms. Factory installed PVC gaskets in all PUF Panels for 100% leak-proof jointing. No use of silicon selaent to fill joint gaps All Inside Wall & Ceiling Area are 0.5mm Stainless Steel SS. Outside Exposed Wall Area 0.8mm Stainless Steel SS304 Outside Un-exposed Wall Area 0.5mm Pre-painted GI Sheet Galvanized steel clad (0.5mm top /0.5mm)PUF Panels. Cam locks -Wall to Wall, Wall to Ceiling, Wall to Floor. Corner 'L' panels for corner panel jointing with side panels Door will Right/ Left hand side Hinged and Flushed. Built-in cylindrical lock, with cam lift-type self-closing door Dimensions: 850 x 1980mm High (opening) BITZER Germany factory-make Semi-hermetic Aircooled Condensing Unit Trufrost Make Evaporators with SS Casing. Centrally Ceiling -mounted Slim-line evaporator with 150mm height. Dual-side Air Discharge design for uniform air flow Microprocessor based programmable Control Panel for Freezer & Chiller rooms with Isolators, Single Phase protection, Hi-Lo Voltage Protection, Defrost Control, Temperature Control, Compressor Running indicator functions. Condensate water from evaporator unit to be routed through wall mounted wall drain traps. SS Box including P-trap to flush fit in civil wall cavity. Site coordination to be done for fitment of SS box as per site condition		
Cold	Ø	NA				
Hot	Ø	NA				
Waste	Ø	NA				
ELECTRIC :						
Power		2.5kw				
Voltage		415v/50hz/1ph				
EXHAUST						
GAS:						
BTU/h		NA				
KW		NA				
Con.			NA			
ACCESSORIES:						
Trap Alarm, High-Low Temperature Alarm, PVC Strip Curtain, View Port, 1mm SS Kick Plate on both side of Door, Vapour Proof IP 65 casing for light						

9.2.9. 2-DOOR REFRIGERATED COUNTER ON TOP

ITEM NO: ITEM NO- WIC03/ WI04/ BS19/ GD06	2-DOOR REFRIGERATED COUNTER ON TOP A304 R290
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QUANTITY: 1+2+1				
MAKE: TRUFROST /CELFROST/BLUESTAR				
MODEL:				
ALTERNATEMAKE: EQUIVALENT				
SIZE: As per BoQ				
Width:	Depth:	Height:		
CAPACITY				
M.E.P REQUIREMENT				SPECIFICATIONS
PLUMBING :				• 2 doors refrigerated counter. Built-in refrigeration unit. External doors, front, back and side panels in AISI 304 Stainless Steel. • Internal panels and fittings in AISI 304 Stainless Steel. Ventilated. • High-density expanded polyurethane insulating foam, 60 mm in thickness, with cyclopentane injection for long-term insulation and energy saving. Digital control panel. Completely automatic defrosting and automatic evaporation of defrost water. • Temperature range: -2/+8° C. CFC and HCFC free. R290 refrigerant gas for the lowest environmental impact - CFC and HCFC free. Self closing doors and magnetic door seal to guarantee perfect closure.
Cold	Ø	NA		
Hot	Ø	NA		
Waste	Ø	NA		
ELECTRIC :				
Power	0.46kw			
Voltage	220-240v/50-hz/1ph			
EXHAUST				
GAS:				
BTU/h	NA			
KW	NA			
Con.		NA		
ACCESSORIES:				
SPECIAL NOTE:				

9.2.10.WALK-IN COOLER

ITEM NO: WIC03/ WI04/ BS19/ GD06				WALK-IN COOLER			
QUANTITY: 1							
MAKE: TRUFROST /CELFRUST/BLUESTAR							
MODEL: Customized							
ALTERNATEMAKE: EQUIVALENT							
SIZE - As per BoQ							
Width:		Depth:		Height:			
CAPACITY							
M.E.P REQUIRMENT				SPECIFICATIONS			
PLUMBING:				PUF Panels 60mm thick . Wall to Wall, Wall to Floor, Wall to Ceiling with <i>Built-in round-off wall corners.</i> “T” joint cam-lock interlocking for two coldooms joining together. No use of flashing/riveting to join two rooms. Factory installed PVC gaskets in all PUF Panels for 100% leak-proof jointing. No use of silicon selaent to fill joint gaps All Inside Wall & Ceiling Area are 0.5mm Stainless Steel SS. Outside Exposed Wall Area 0.8mm Stainless Steel SS304 Outside Un-exposed Wall Area 0.5mm Pre-painted GI Sheet Galvanized steel claddd (0.5mm top /0.5mm)PUF Panels. Cam locks -Wall to Wall, Wall to Ceiling, Wall to Floor. Corner 'L' panels for corner panel jointing with side panels Door will Right/ Left hand side Hinged and Flushed. Built-in cylindrical lock, with cam lift-type self-closing door Dimensions: 850 x 1980mm High (opening) BITZER Germany factory-make Semi-hermetic Aircooled Condensing Unit Trufrost Make Evaporators with SS Casing. Centrally Ceiling -mounted Slim-line evaporator with 150mm height. Dual-side Air Discharge design for uniform air flow Microprocessor based programmable Control Panel for Freezer & Chiller rooms with Isolators, Single Phase protection, Hi-Lo Voltage Protection, Defrost Control, Temperature Control, Compressor Running indicator functions. Condensate water from evaporator unit to be routed through wall mounted wall drain traps. SS Box including P-trap to flush fit in civil wall cavity. Site coordination to be done for fitment of SS box as per site condition			
Cold	Ø	NA					
Hot	Ø	NA					
Waste	Ø	NA					
ELECTRIC:							
Power		2.5kw					
Voltage		415v/50hz/1ph					
EXHAUST							
GAS:							
BTU/h		NA					
KW		NA					
Con.		NA					
ACCESSORIES:							
Trap Alarm, High-Low Temperature Alarm, PVC Strip Curtain, View Port, 1mm SS Kick Plate on both side of Door, Vapour Proof IP 65 casing for light							

9.2.11. HEATED BANQUET TROLLEY

ITEM NO: ITEM NO- ST01				HEATED BANQUET TROLLEY-10 GN 2/1			
QUANTITY:							
MAKE: ELECTROLUX/OZTI/FOSTER /ALTOSHAAM							
MODEL: BT1021H/ 351156							
ALTERNATEMAKE: EQUIVALENT							
SIZE: As per BoQ							
Width:		Depth:		Height:			
		mm		mm			
CAPACITY		10GN 2/1.					
M.E.P REQUIRMENT				SPECIFICATIONS			
PLUMBING :				- Constructed in double-walled, 304 AISI stainless steel with expanded polyurethane insulated panels. - Ergonomic handles for easy movement. 304 AISI stainless steel grids capable of holding GN 2/1 and GN 1/1 containers or plates. Temperature can be set from 30°C to 90°C with digital display. - Humidity can be added inside the chamber to keep food from drying. N. 2 fixed castors and N. 2 swivelling castors with brakes, mm125 in diameter. - Full perimeter bumpers for added shock protection. - By using the optional eutectic plates it is possible to keep dishes at a temperature of +5°C for about two hours. - Load capacity: 170 Kg.			
Cold	Ø	NA					
Hot	Ø	NA					
Waste	Ø	NA					
ELECTRIC :							
Power		2.7kw					
Voltage		230v/50-60hz/1ph					
EXHAUST							
GAS:							
BTU/h		NA					
KW		NA					
Con.		NA					
ACCESSORIES:							
SPECIAL NOTE:							

9.3. EQUIPMENT, MATERIALS AND INSTALLATION

- 9.3.1. All equipment and materials shall be new and without blemish or defect.
- 9.3.2. Installations works, materials and equipment shall be in full compliance with the Local Code of Practice and Regulations. In the absence of a Local code, the UK's code and regulations shall govern. All costs and fees connected with any inspection, tests and permits for the installation carried out by the authorities shall be borne by the CONTRACTOR.
- 9.3.3. Electrical equipment and materials shall be products which will meet with the acceptance of the agency inspecting the electrical work. Where such acceptance is contingent upon having the products examined, tested and certified by Underwriters or other recognized testing laboratory, the product shall be examined, tested and certified as to the type or quality of materials or equipment as indicated.
- 9.3.4. All electrical equipment shall be rated for compatibility and operation on the single/three phases main power supply as provided by relevant local authorities for the project concerned.
- 9.3.5. Equipment shall conform to current standards established by the National Sanitation Foundation.
- 9.3.6. Steam heated equipment shall be in accordance with requirements of the A.S.M.E. or relevant B.S. specification.
- 9.3.7. Gas heated equipment shall be equipped with automatic pilot lights. Ovens and other concealed burners (including air blast wok ranges and steam cabinets) shall have flame failure devices fitted to CE standards or approved equal.
- 9.3.8. Exhaust hoods and fire protection system shall comply with the N.F.P.A. Bulletin 96, and requirements of the local fire department.
- 9.3.9. It is the intent of these specifications that wherever a manufacturer of a product is specified, and the terms "other approved" or "approved equal" or "equal" are used, the substituted items must conform in all respects to the specified item. No consideration will be given to claims that the substituted items meet the performance requirements with lesser construction. Performance as delineated in schedules and in the specification shall be interpreted as minimum performance.
- 9.3.10. The use of brand names shall serve as a guide as to the type and quality of equipment required and shall not preclude other makes being offered.
- 9.3.11. The CONTRACTOR shall be responsible to provide proof and evidence that equipment substituted by other makes than those specified shall conform in all respects to the specified items. Consideration will be given to the availability and quality of service and maintenance in the local market, notwithstanding the brand names being called up in the specifications.
- 9.3.12. The CONTRACTOR shall be responsible for obtaining approval from the Local Authority for the operation of the Food Service Equipment notwithstanding the brand names being called up in the specification.
- 9.3.13. All equipment of one type (such as pumps, valves, etc.) shall be the products of one manufacturer, wherever possible
- 9.3.14. Substituted equipment or optional equipment where permitted and approved, must conform to space requirements. Any substituted equipment that cannot meet space requirements, whether approved or not, shall be replaced at the contractor's expenses. any modifications of related systems as a result of substitutions shall be made at the contractor's expense.
- 9.3.15. Note that the approval of shop drawings, or other information submitted in accordance with the requirements herein before specified, does not assure that the Engineer, Architect, or any other Owner's Representative, attests to the dimensional accuracy or dimensional suitability of the material or equipment involved or the ability of the material or equipment involved or the mechanical performance of equipment. Approval of Shop Drawings does not invalidate the plans and specification if in conflict unless a letter requesting such change is submitted and approved on the Engineer's letterhead.
- 9.3.16. Substitutions of equipment for that shown on the schedules or designated by model number in the specification will not be considered if the item is not a regular catalogued item shown in the current catalogue of the manufacturer.

9.4. TOOLS

- All special tools for proper operation and maintenance of the equipment provided under this specification shall be included in the supply of this equipment and shall be delivered to the Owner's representative and a receipt requested for same.

9.5. MISCELLANEOUS FIRE PROTECTION

- In addition to fire protection means specified elsewhere in this specification, this CONTRACTOR shall comply with the following:
All spaces between pipes and their respective sleeves shall be packed full depth with mineral wool, or other equally fire resistant material, and compressed firmly in place. Fibre glass shall not be used. Sleeve clearance shall not exceed 1/2" between pipes (or ducts) and sleeves. Use individual sleeves for each pipe or duct. Before escutcheons are attached caulking must be available for inspection and notification should be made to the site supervisor.

9.6. PHOTOGRAPHS AND MAINTENANCE/OPERATIONAL MANUALS

- The CONTRACTOR shall also furnish each of the same parties, a complete documentation of operational and maintenance manuals of all Foodservice equipment. CONTRACTOR should also provide a recommend list of spare parts to the owners.
- Manuals are to be separate for each location and as built drawings are to be part of the documentation (i.e. layout and rough-in)

9.7. TESTING, COMMISSIONING, TRAINING

- Prior to commissioning the equipment, the CONTRACTOR is to satisfy himself through extended equipment testing that all equipment is working satisfactorily and in accordance with manufacturer's instructions.
- The commissioning of the equipment shall be effected only for an entire area or kitchen at one time and which areas have to be fully operation and completed with all items, accessories, parts, etc. Sufficient advice of the commissioning period has to be given to the Arc and CONTRACTOR shall establish a detailed report on the event. All raw material and such as is deemed necessary and adequate for the purposes of testing, demonstrating and commissioning of the equipment shall be provided by the employer.
- All works of guarantee, rectifications, amendments etc., arising from the commissioning of the equipment and reasonably required by architect shall be rectified within the shortest possible period of time, to be stipulated at that point in time. Appropriate advice of the completed works has to be given.
- The hospital's F&B departmental key staff shall assist at the commissioning of all equipment. Moreover the CONTRACTOR will maintain on site a qualified engineer for a minimum period of four (4) days following the commissioning period for the purpose of providing repeated in-depth training on all equipment to the operators F&B departmental key staff. The CONTRACTOR should satisfy himself that the operator's staff is well instructed on the equipment and is able to handle and maintain the equipment in the manner as to guarantee minimal disturbance to the operation and maximum life span. A log book of all training activities shall be kept by the CONTRACTOR during the said training period and handed over to the owner after completion.

9.8. DEFECTS LIABILITY PERIOD

1. The Defects Liability Period shall be the 365 days following the date of successful final Commissioning and acceptance of the works by the architect. During the Defects Liability Period the CONTRACTOR shall provide full service and maintenance in accordance with the definitions in of this specifications.

9.9. PIPING SYSTEMS

9.9.1. PIPING SYSTEMS – GENERAL

- 9.9.2. The drawings indicate schematically the size and location of piping. Piping shall be set up and down and offset to meet field conditions and co-ordination between trades without additional cost. Piping shall conform to the latest BS code for pressure piping.

- 9.9.3. Pipework shall conform fully to the following requirements:

- a) Provide proper provision for expansion and contraction in all portions of pipework, to prevent undue strains on piping or apparatus connected therewith.
- b) Approved bolted, gasketed, flanged (screwed or welded) joints shall be installed at all apparatus and appurtenances, and wherever else required to permit easy connection and disconnection. Screwed unions with steel faces can be used on piping

2" or less.

9.9.4. Screwed piping shall conform to the following :

- a) Pipe nipples - Any piece of pipe 3" in length and less shall be considered a nipple. All nipple with unthreaded portion 1 - 1/2" and less shall be extra heavy. Only shoulder nipples shall be used. No close nipples will be provided.
- b) Screw threads shall be cut clean and true; screw joints made tight without caulking. No caulking will be permitted. A non hardening lubricant will be permitted. No bushings shall be used. Reductions, otherwise causing objectionable water or air pockets, to be made with eccentric reducers or eccentric fittings. All pipe shall be reamed out after cutting to remove all burrs

9.10. MATERIALS FOR PIPE

i. Pipe shall be fabricated from the following :

Steam	API Sch 40 seamless
Steam Condensate Return	2 - 1/2" & Smaller
Drips and Pump Discharge	API Sch 40 seamless
Hot & Cold Water	3" & Larger - Standard Weight Steel Type L Copper or B.S. 2871 Table X. Flanged pipe at 80mm (3.2") and above. Capillary joint pipes below 80mm (3.2").
Hot water pipe chased in	UPVC insulated copper pipes to BS 2871 Table X, walls up to 50mm (2") inside Part 1.
Old water Service	Un plasticized PVC pipes (BS Class D) to BS 3505, 4346 (Parts 1 & 2).
Gas Pipes	Galvanized steel to BS 1387 and heavy grade and fitting to BS 1740 for screw joints.
Cleansing water pipes	Galvanized steel to BS 1387 medium grade
Vent stacks at 80mm (3.2") NPS And above	Lead caulked cast iron socket and spigot pipe to BS 416.
Vent stacks and anti siphonage pipes below 80mm NPS	Galvanized steel to BS 1387 medium grade with screw joints.
Kitchen waste pipe up	Galvanized steel to BS 1387 medium grade with to 50mm (2") NPS screwed joints; or cast iron pipe to cast iron soil pipe institute standard 301-60T.
Compressed Air	Galvanized steel to BS 1387 Heavy Grade.
Air Vacuum	Galvanized steel to BS 1387 Medium Grade.

- ii. Unless specified otherwise herein all pipes shall conform to be Local Waterworks Standard Requirements or British Standard Specification and shall be approved by the Building Authority.
- iii. All copper tubing shall be not less than 99.9 per cent pure copper. Wherever possible, tubing shall be continuous with couplings up to 20 ft. in length. Tubing shall conform to BS 2871. Cast iron, ductile iron, galvanized wrought iron galvanized steel or copper pipes of approved grade will be used for fresh water inside service. Consideration can also be given for the use of unplasticized

- iv. PVC pipes and fittings of approved grade on cold water inside service upon application by the authorised person or a licensed plumber nominated in writing by him. All unplasticized PVC pipes must be properly supported and shielded from direct sun rays and must be painted with white acrylic paint when exposed. CONTRACTOR is to provide details of type, make and duty of all pipe materials and fittings to be used on forms prescribed by Local Waterworks Authority to be submitted for approval.
- v. No hub type cast iron pipe shall be in accordance with Cast Iron Soil Pipe Institute Standard 301-60T.
- vi. Piping specifications shall be submitted as required with shop drawings.
- vii. All exposed piping in the kitchen shall be chrome plated.
- viii. Metallic piping should not be fixed in contact with magnesium oxychloride flooring composition; which is injurious to most metals and alloys or in contact with Keene's cement and certain other quick setting materials having acid constituents. All galvanized steel piping that comes into direct contact with concrete shall be bitumen coated and wrapped with hessian or other suitable material.
- ix. Copper pipes are not to be used in conjunction with galvanized steel cisterns, cylinders or pipes. Where copper piping is used, consideration should be given to the use of copper cylinders and cisterns or cisterns of non-metallic material. In the event of contact of dissimilar metals in the presence of some waters resulting in corrosion due to galvanic action, the use of such metals should be avoided or kept apart by the use of fittings made of electrically non-conducting materials
- x. Pipe sleeves shall be provided for all pipes penetrating floor slabs or walls. Spaces between pipes and sleeves are to be filled with a fire resistant material (mineral wool) and compressed firmly in place. The clearance between pipe and sleeve shall not exceed 12mm (0.5"). All pipe work shall be inspected by a representative of the Local Authority Governing Utilities before it is backfilled or covered over.
- xi. All cast iron pipe work shall be coated internally/externally with black bitumen material to BS 3416 Type 2 (except where pipe is concrete lined)

9.11. MATERIAL FOR FITTINGS

- i. Fittings shall conform to the following:

Note that table defines the pipe size above which it becomes mandatory to fabricate by means of welding. Where table indicates screwed fittings, the CONTRACTOR may elect to use welding fittings. Pressures shown are SWP (Steam Working Pressure).

Steam	2 - 1/2" & larger: flanged
Condensate, return, drip & condensate pump discharge	2" & smaller - 125 SWP: cast iron screwed.
Hot & Cold water	3" & Larger - Standard Weight Steel Type L Copper or B.S. 2871 Table X. Flanged pipe at 80mm (3.2") and above. Capillary joint pipes below 80mm (3.2")
Compressed air	Galvanized steel to BS 1387 Heavy Grade.
Air Vacuum	Galvanized steel to BS 1387 Heavy Grade.
Vents and reliefs	Galvanized steel to BS 1387 medium grade with siphonage pipes below screw joints.

- ii. All welding elbows shall be long radius elbows.
- iii. Welding end fittings shall have the same bursting pressure as pipe of the same size and schedule. The fittings shall be one piece except that weld holes are permitted where branches are at least one pipe size less than the main. Saddles are also permitted, where branches are at least one pipe size less than the main, for all services except steam 16 psig or higher, and water over 125 psig.
- iv. All solder for copper tubing shall have a melting point of not less than 460 degrees F., composed of 95% tin and 5% antimony. All piping shall be installed in a workmanlike manner, according to the manufacturer's instruction. All joints shall be thoroughly cleaned before connecting.

9.12. VALVES

- i. Furnish and install valves shown on the drawings, specified herein and/or necessary for the control and easy maintenance of all piping and equipment. All valves shall be first quality of approved manufacture, shall have proper clearances, and shall be tight at the specified test
- ii. Pressure. Each valve shall have the maker's name or brand, the figure or list number and the guaranteed ANSI working pressure cast on the body and cast or stamped on the bonnet, or shall be provided with other means of easy identification. All valves shall be the product of one manufacturer except for special application. Where figure numbers of one manufacturer are stated, equivalent figure numbers can be substituted.
- iii. Valves shall be of minimum working pressure and materials as fittings specified for the service except as herein modified. All gate and globe valves shall be suitable for recapping under pressure. Regardless of service, valves shall not be designed for less than 125lbs. per square inch steam working pressure.
- iv. Gate valves shall conform to the following categories. Where figure numbers of one manufacturer are stated, equivalent figure numbers can be substituted.

GA-V1

Gate valves 2" and below shall be Toyo fig 206A bronze, screwed, 125 # S.W.P. with solid wedge disc and non-rising stem.

Gate valves above 2" shall be Toyo fig 421A cast iron, flanged, 125 # S.W.P. OS & Y with bronze trim.

GA-V2

Gate valves 2" and below shall be Toyo fig 298 bronze, screwed, 150 # S.W.P. with solid wedge disc, union bonnet, rising stem.

Gate valves above 2" shall be Toyo fig 712 cast steel, flanged, 150 # S.W. OS & Y with bronze trim.

GL-V1

Globe valves 2" and below shall be Toyo fig 220 bronze, screwed, 125 # S.W.P. with renewable teflon seat and non-rising stem.

Globe valves above 2" shall be Toyo fig 400A cast iron, flanged, 125 # S.W.P. OS & Y with bronze trim.

GL-V2

Globe valves 2" and below shall be Toyo fig 221 bronze, screwed, 150 #S.W.P. with renewable teflon seat, union bonnet, rising stem.

Globe valves about 2" shall be Toyo fig cast steel, flanged, 150 #S.W. OS & Y with bronze trim.

CH-V1

Check valve 2" and below shall be Toyo fig 236 swing type, brass or bronze, screw ends.

Check valve above 2" shall be Toyo fig 682 swing type, cast iron bronze trim, flange ends.

CH-V2

Check valves 2" and below shall be Toyo fig 230 lift type, brass or bronze, screw ends.

CH-V3

Check valve shall be butterfly type with spring return.

ST-1

Strainer 2" below shall be Toyo fig 380 brass or bronze with 20" mesh stainless screen.

Strainer above 2" shall be Toyo fig 381A cast iron body with 20 mesh brass screen.

ST-2

Strainer 2" and below shall be Toyo fig 380 brass or bronze with 20 mesh stainless steel screen. Strainer above 2" shall be Toyo fig 381A cast iron body with 20 mesh stainless screen.

9.13. WELDING PROCEDURE

- i. Pipe welding shall comply with the provisions of the latest revision of the applicable code, or such local requirements as may supersede codes mentioned above.
- ii. Before any new pipe welding is performed, submit a copy of welding Procedure specifications together with proof of its qualification as outlined and required by the most recent issue of the code having jurisdiction.
- iii. Before any operator shall perform any pipe welding, submit the operator's Qualification Record in conformance with provisions of the code having jurisdiction, showing that the operator was tested under the proven Procedure Specification submitted.

9.14. FOOD SERVICES EQUIPMENT: GENERAL REQUIREMENTS

SCOPE OF WORK

- i. The work to be performed under this section of the Specification shall comprise the supply, delivery to site, installation, testing, commissioning and maintenance of the Food Services Equipment as hereinafter more fully described and shown on the Drawings; also including such minor works as are necessary for the proper carrying out of the installation and operation of the equipment, whether or not such works are specifically called for in the specification and drawings.
- ii. In all cases where a device or part of an equipment is herein referred to in the singular number, it is intended that such reference shall apply to as many devices as required to complete the installation.

9.15. GENERAL

- i. Brand names and catalogue numbers used in the Contract Documents serve to define the specific requirements of each of the items of equipment with regard to type, size, capacity and quality required. All layout drawings are prepared on the basis of the brands. Offers of alternate brands must fit into the layouts as shown in the Drawings without exception. Should for any reason being the CONTRACTOR responsibility modifications be required and approved by the Arc all costs involved including cost of modifications to other related works shall be borne by the CONTRACTOR.
- ii. Each item of equipment shall be supplied complete with all accessories and fittings whether specifically called up for in the specifications or not and shall be ready for operation when hooked-up to the appropriate services.

- iii. All equipment shall be delivered completely prewired and piped to an external point for hooking up to the appropriate services. All wiring shall be carried out in galvanized steel conduits. The hook-up for all building services shall be done in a work-manship like manner in terms of aesthetics safety and function. No pipework or conduits shall be executed exposed to the view, they shall neatly concealed either by proper box-up or otherwise (except gas lines). Any exposed pipework which cannot be concealed at all shall be either stainless steel or chrome plated for ease of cleanability (except gas lines which may need to be colour coded).
- iv. All socket outlets installed shall be water and vapour proof (subject to local code practice).
- v. Equipment with permanently connected services must be adequately anchored to prevent movement.

9.16. STANDARD MANUFACTURED EQUIPMENT

- i. Drawings, specifications, and other information provided by the manufacturers of manufactured equipment shall be followed whether or not the said information is included in the Contract Documents.
- ii. Furnish an approved gas pressure regulator for individual gas fired equipment, when one is not provided by the manufacturer. Gas pressure regulators shall be standard adjustable water column pressure and shall be of a type to properly regulate gas flow to burners and pilot lights. For modular in-line range assemblies the CONTRACTOR shall properly coordinate equipment requirement with other relevant trade to ensure the proper and correct gas supply pressures on the supply lines.
- iii. Refrigerators and freezers shall be furnished with exterior digital thermometers with chrome plated bezels. Thermometers shall be adjustable and shall be calibrated after installation.
- iv. Refrigerators and freezers with remote refrigeration systems shall be complete with thermostatic expansion valves at the evaporator coil.
- v. Refrigerator and freezer hardware shall be heavy-duty. Hinges shall be self-closing up to 90 degrees; beyond which they shall stay open. Latches shall be magnetic edge mount-type, unless otherwise specified.
- vi. Refrigerator and freezer door latches shall be fitted with heavy duty cylinder locks, all keyed alike within respective work areas and provided with master keys.
- vii. Provide all dishwashers, internally wired by the manufacturer to junction boxes, including push button switches, motors, immersion heaters, solenoids, etc.
- viii. The CONTRACTOR is to satisfy himself that the equipment supplies are suitable for operation with the energy media available locally notwithstanding the brand names called up in this specification.
- ix. All roll-in refrigerators shall be furnished with a 2/1 angle trolley each

9.17. FABRICATED EQUIPMENT

Work as included under this heading of the specifications shall conform with current Standards and Revisions established by the National Sanitation Foundation (USA).

General Construction

- i. Fabricated equipment must be undertaken by one manufacturer only, satisfactory to the Architect.
- ii. Work shall be done in an approved workmanlike manner satisfactory to the Architect.
- iii. Stainless steel shall be standard gauge, 18-8, Type 304 (not over .012% maximum carbon) No. 4 finish.
- iv. All framework shall be of welded construction with welds ground smooth. The framework shall be stainless steel.
- v. Edges for general shelving shall be 90 degrees bent down 40mm and inwards 90 degrees 12mm (0.5") unless otherwise detailed, with corners ground, and polish
- vi. All seams and joints shall be welded. Welds shall be ground smooth and polished to match the original finish.
- vii. Field joints in stainless steel tops, etc., where required due to equipment size or installation requirements, shall be welded, ground and polished to match surrounding surface.

Note: Butt joints made by riveting straps under seams and filling with solder is unacceptable

- viii. Underside of open base table tops, shelves, sinks, and drain boards shall be sound deadened in accordance with N.S.F. with "Tacky Tape", or bitumen base. For tables with under shelves, the sound deadening material is to be applied between the support frames and tabletop sheet.
- ix. Verify size and location of all duct connections with the VAC Contractor before fabrication.

- x. Back and end splashes on table tops shall be bent 90 degree upwards, radius 19mm (0.75") 25mm (1"), shall be covered with a 80mm (3.2") high 12mm (0.5") deep s/s U- channel fixed with s/s tap screw and washer in linear intervals of not less than 600mm. Top edge of U-channel shall be sealed with MDL 582054 rubber profile or approved equal. Corners of U-channel shall be cut 45 degrees to assure smooth joint. Side splashes shall be provided whenever equipment abut a wall.
- xi. Trademarks and names of fabricator shall not be affixed to equipment without written approval of the Architect.
- xii. All components of fabricated equipment shall be of the following materials, unless otherwise specified in accordance with the ACCF Modular Standards according to the class grade of material specified elsewhere in the specifications.
- xiii. All hardware and plumbing fixtures shall be identified with manufacturers name and number so that broken or worn parts may be replaced. CONTRACTOR shall submit sample if requested.
- xiv. All items to be fabricated as shown on drawings and elevations and subject to verification of site dimensions.
- xv. All fabricated equipment shall be inspected by FSC and client or the client's representative during factory visits. These factory visits shall be carried out in two stages. The first factory visit shall be carried to approve all sample materials and typical fabricated equipments. The second factory shall be carried out when the majority of equipments are completed prior to shipping.

9.18. DESCRIPTION OF MATERIAL

GRADE C1

1	Metal table tops	16 ga s/s (1.58)
2	Wood table tops	2" (50.8mm) thick laminated hard Northern maple (unless prohibited by applicable health codes)
3	Sink, drainboards or backsplash	16 ga s/s (1.58)
4	Bain marie	16 ga (1.58mm)
5	Elevated shelves and under shelves	16 ga s/s (1.58mm)
6	Glass rack shelves	16 ga s/s (1.58mm)
7	Body, exposed	18 ga s/s (1.27mm)
8	Body, unexposed	18 ga s/s (1.27mm)
9	Legs	41.3mm x 41.3mm outer size 16 ga s/s (1.59mm) square tube
10	Crossrail	25mm x 25mm outer size 16 ga s/s (1.59mm) square tube
11	Feet	14 ga s/s (1.98mm) adjustable bullet type
12	Drawer pans	18 ga s/s (1.27mm) coved and removable
13	Drawer faces	18 ga s/s (1.27mm)
14	Drawer frames	14 ga s/s (1.98mm)
15	Outer hinged and sliding door pans	18 ga s/s (1.27mm)
16	Inner hinged and sliding door pans	20 ga s/s (0.95mm) 2B finish
17	False bottoms	18 ga s/s (1.27mm) perforated
18	Top and shelf braces	14 ga s/s (1.98mm)

19	Refrigerated fixture exterior	18 ga s/s (1.27mm)
20	Refrigerated fixture interior	20 ga s/s (0.95mm) 2B finish
21	Refrigerator shelving	s/s wire
22	Ice bins	exterior 16 ga s/s (1.59mm) interior 18 ga s/s (1.27mm)
23	Wall brackets	14 ga s/s (1.98mm)
24	Exhaust ducts and collars	18 ga s/s (1.27mm)
25	Wall flashing	18 ga s/s (1.27mm)
26	Sink fitting	rotary waste valve with strainer and overflow
27	Shelf turn ups	on back and sides where table abut walls or equipment
28	Sound deadener	under table-top
29	Plumbing hook-up material	to general specifications conventional channel with gummi profile
30	Backsplash type	- fixed to wall

31. Tabletops

Metal tops shall be one-piece welded construction, reinforced on the underside with bracing welded in place to permit tops to support heavy weight without deflection. Lateral and cross bracing shall be 100mm (4") wide 40mm (1.6") turned down, 12mm (0.5") in U-channel, spot welded along both perimeters to underside of table, open end facing downward. The front edge of table shall be 50mm (2") turned down (channel edge), 20mm (0.79") bent inwards at 120 degree to vertical.

32. Legs And Crossrails

Welds at crossrails shall be ground smooth. Legs shall be fitted with sanitary feet with not less than 3/4" (19.0mm) adjustment. Legs shall be fastened to equipment continuously welded.

33. Cabinet Bodies

Enclosed cabinet bodies shall be fabricated from stainless steel sheets reinforced with U-channel frame members to form a rigid structure. Bodies shall be welded construction with front rails, mullions, etc., welded to appear as one-piece construction. Exposed and unexposed exterior and interior sections shall be stainless steel.

34. Drawers

- i. Drawers front shall be sealed, double-pan construction.
- ii. Drawer pulls shall be one piece construction, incorporated in front panel, as per enclosed cut sheet detail.
- iii. Drawer slides shall be COMPONENT HARDWARE SERIES S25 or approved equal.
- iv. Drawer assemblies shall be self-closing when empty and easily removed without tools.
- v. Drawer pan insert shall be S/S 1/1GN (RIEBER, FRANKE, BLANCO OR APPROVED EQUAL.) unless otherwise specified.

35. Doors

- i. Doors shall be double-pan, sound insulated construction, with outer corners welded and polished. Outer and inner pans tack welded with seams soldered to form a 3/4"(19.0mm) finished thickness.
- ii. Door pulls shall be one piece construction incorporated in front panel as per enclosed cutsheet detail.
- iii. Single-pan doors shall be reinforced with 18 gauge (1.27mm) stainless steel closed at sections.
- iv. Hinged doors shall be flush mounted with a continuous stainless steel, door pull.
- v. Door hinges shall be COMPONENT HARDWARE R42-2842 or approved equal, spring loaded for self closing for all underbars, reach-ins and undercounter refrigerators/freezers.
- vi. Sliding doors shall be suspended, quiet in operation, large size stainless steel wheels and stainless steel ball bearings, mounted in overhead tracks as per COMPONENTHARDWARE B57 series or approved equal.
- vii. Sliding doors shall be removable without the use of tools.

36. Shelves

- i. Open base table undershelves shall be a full 90 degrees bent down 40mm (1.6") and 90 degrees bent inwards 12mm (0.5"), edges ground and welded tightly to legs. Under-shelves shall be turned up 1" (25.4mm) at back and sides where tables abut walls and other equipment.
- ii. Enclosed base table undershelves shall be stationary, unless otherwise specified, with back and ends turned up 1" (25.4mm) with hug edge to insure tight fit to the body. Front edge shall have square turn down and back as g.1 above.

- iii. Wall mounted shelves shall have 90 degrees angle turned down 40mm (1.6") and 90 degrees back 12mm (0.5") in, in front and sides, with 2" (50.8mm) turned up with hug edge at back where ends abut walls and other equipment. Wall fixation shall consist of 600mm (23.6") high adjustable rails fixed with three heavy s/s top screws and wall anchors. Rail to receive s/s bracket at desired height.
- iv. Free standing table mounted shelves shall have 90 degrees angle turned down 40mm (1.6") and 120 degrees turned back 20mm (0.79") on all sides. Supports shall be 1" (25.4mm) O.D. 15 gauge (1.59mm) stainless steel tubing welded to overhead superstructure.
- v. Shelves shall have underbracing with U-channel of 60 (2.4") - 80mm (3.2") wide (depending on Width of shelf) 25mm (1") down 90 degrees and 12mm (0.5") in 90 degrees on longitudinal side only.

9.19. Sinks And Drainboards

- i. Integral sinks shall be fabricated of same gauge and material as drainboard or tops. Sinks integral with tops shall be fabricated or die formed. Die formed sinks shall not be less than 18 gauge (1.27mm) stainless steel.
- ii. Sink compartments shall have fully coved vertical and horizontal interior corners with fall to drain. Multiple compartment sink partitions shall be of same material, double wall, and continuously welded in table top with a distance of not less than 50mm (2") between sink tanks. Potwash sinks shall be 3 compartment type, separated from each other by decant overflow wells with coved corners and removable perforated stainless steel filter baskets, with 2 lift-up rods per baskets.
- iii. Front and open end sink edges shall be 50mm (2") turned down, 90 degree, 20mm(0.79") bent inwards at 120 degrees with a marine type edge of 19mm (0.75") top border and bevelled recess of 12mm (0.5") to sink opening.
- iv. Drainboards, splashes, and turned up edges shall have radius bends 5/8" (15.9mm) or larger at horizontal and vertical corners.
- v. All sinkboards and table tops with sink tables, dish entry and exit tables shall have a fall towards sink or dish washing machine.

9.20. Drains

- i. For centrally located sink drain holes
- ii. Rotary handle drains shall be COMPONENT HARDWARE, model D-50-4591 or approved equal with flat strainer and connected overflow for deep sink installation and MODEL COMPONENT HARDWARE D50-7215 or approved equal for shallow sink installations.

For corner located sink drain holes

- i. Standpipe valve, chrome nickel steel standpipe, chrome nickel steel corner guard sieve plate shall be by FRANKE series 304 or approved equal.
- ii. Free flow drain shall be COMPONENT HARDWARE or approved equal to fit standpipe.

Faucets

- i. All faucets and pre-rinse assemblies shall be polished chromium plate
- ii. Deck mounted mixing faucet assemblies shall be polished chromium plated, with 250mm (10") swing nozzle and non-splash aerator, as specified in the elevations.
- iii. Wall mounted mixing faucet assemblies shall be series polished chromium plated, with 250mm (10") swing nozzle, is specified in the elevations.
- iv. Dipperwell and faucet sets/assemblies shall be COMPONENT HARDWARE MODEL K30-1010 or

equal , unless specified otherwise

9.21. Pre-Rinse Assemblies

Wall and deck mounted pre rinse assemblies shall be similar and equal to as specified in the equipment specifications.

9.22. Scraping Block

Provide scrape unit on scraping station, fixed to front edge of table top as manufactured by NORDIEN or approved equal.

9.23. Locks

- i Locks for metal drawers shall be COMPONENT HARDWARE SERIES P-10-0370 or approved equal.
- ii Locks for metal sliding doors shall be COMPONENT HARDWARE SERIES P20-0490 or approved equal.
- iii Locks for hinged doors shall be COMPONENT HARDWARE SERIES P30 or approved equal.
- iv Locks shall be keyed alike within individual respective work areas and provided with master keys. The demarcation of work areas are to be established with the hospital administration

9.24. Castors

Castors shall be 5" (127.0mm) or 6" (152.4mm) diameter heavy-duty type, ball bearing, disc wheel, with replaceable greaseproof rubber or neoprene tires with a minimum tire tread width of 1-3/16" (30.2mm). Minimum capacity per caster shall be 250 pounds (112.5kg), unless otherwise specified. Provide grease fittings, thread guards, and polished plated finish. Provide with wheel locking device where specified.

9.25. Refrigerated Fixtures:

- a) Insulation shall be 2" (50.8mm) polyurethane that has to be injected foamed-in-place using a blowing agent that is free of VOC (Volatile Organic Compound), has a low GWP (Global Warming Potential) and has an ODP (Ozone Depleting Potential) value of 0. Fibreglass or polystyrene will not be acceptable.
- b) Cabinet bodies shall be of double-wall construction. Vertical and horizontal comers shall be coved and floor pan shall not be provided with a drainpipe. The condensate from the evaporator unit shall be bled off to a sweat evaporator pan outside the cabinet heated by hot gas pipe.
- c) Provide electronic thermometer with electronic thermometer (vapour proof), exterior mounted on work side of each refrigerated compartment. Thermometers shall be adjustable and shall be calibrated after installation.
- d) The interior shall be provided with a 15 watt light bulb per compartment.
- e) Evaporator coils shall be blower type, with thermostatic expansion valve and properly sized to hold an internal cabinet temperature of 2°C for refrigerator or -18°C for freezer.
- f) Provide breaker strips around the perimeter of all drawers, doors, pan openings and ice pans.
- g) Provide "on-off" switch for self-contained refrigeration systems mounted on the work side.
- h) Provide 18 gauge (1.27mm) stainless steel thresholds for all door openings. Pop rivets will not be acceptable.
- i) Doors shall be double-wall construction. Insulation shall be 2" (50.8mm) polyurethane foam with door perimeters fitted with a COMPONENT HARDWARE SERIES, or approved equal, continuous magnet gasket. Refrigerated doors shall be double glass for refrigerator and triple glass for freezer with heater wires, temper resistant glass as manufactured by ANTHONY or approved equal.

- j) Door hardware shall be heavy-duty similar and equal to COMPONENT HARDWARE SERIES self closing hinges, or approved equal. The door seal mechanism shall be magnetic gasket type with thresholds provided in type 403 chrome steel.
- k) Refrigerated drawers shall be constructed as follows :-
 - Drawer fronts shall be sealed double-pan construction with stainless steel ledge type pulls.
 - Slides shall be 75kg capacity fully extendable for foodservice function and 150kg capacity fully extendable for heavy load bottle drawers as manufactured by MERZ, FRANKE, COUNTERLINE or approved equal.
 - Gasket shall be magnetic type manufactured.
 - Provide a 1/1 GN pan per drawer. Each drawer shall accommodate a 150mm deep 1/1 GN pan unless otherwise stated. Pans shall be removable, stainless steel GN sized, as specified for foodservice application. Each food drawer shall be fixed to a perforated pan. For beverage storage, each drawer shall be fixed to be a solid pan with perforated sides for ventilation.
 - Drawer assemblies shall be self-closing and easily removed without tools.
- l) Each section shall be provided with bottom and intermediate adjustable, removable, wire shelves, mounted on stainless steel shelf brackets. The bottom shelf shall be equipped with stainless steel feet to hold shelf above bottom.
- m) Table tops over condensing units shall be insulated with 50mm (2") polyurethane foam.
- n) All refrigeration system shall operate on CFC free refrigerants. Refrigerant shall be free of VOC (Volatile Organic Compound), has a low GWP (Global Warming Potential) and has an ODP (Ozone Depleting Potential) value of 0.
- o) All blower coils shall be equipped with a self evaporation pan, either electrically heated or otherwise.

9.26. False Bottoms

False bottoms shall have 1/2" (12.7mm) diameter perforations 1" finger holes at each end. Edge shall be 90 degrees bent down 40mm (1.6") and 90 degrees back 20mm (0.79").

9.27. Exhaust Ducts

- i. Dishwasher exhaust ducts shall be all welded construction with one (1) piece trim collar at ceiling. Ducts shall be sized to fit inside the exhaust vents of the dishwasher and over the duct stub down at the ceiling. Ducts shall be attached to dishwasher, stub down and collar with tack welds.
- ii. Dishwashers not having exhaust vent connection shall have ducts sized per the manufacturer's specifications, extended past top of dishwasher with air control damper.
- iii. Exposed duct work from equipment to ceiling shall be all welded construction with trim collar at ceiling. Grease ducts shall be continuous welded to the equipment and the duct stub down

9.28. Fabricated Exhaust Ventilator And Canopies

- i. Exhaust hoods shall be constructed fully in 18 ga stainless steel 304, no 4 finish. Hood to be wall type or island type vertical front and drip tray throughout at bottom perimeter. All seams and joints are continuously welded, ground and polished to match surrounding surface. Filter housing in stainless steel full length of hood for stainless steel dual filters as per
- ii. COMPONENT HARDWARE SERIES F30-2020 or approved equal to be installed on not less than 45-degree angle. Filter housing to terminate at bottom in pitched drip tray. At low point of tray

- provide drain with valve to terminate in enclosed grease container of 200ml capacity to be easily removed for cleaning. Furnish necessary rod hanger plates at front, to suspend from ceiling. Furnish necessary angle frame members at rear for fastening to wall. Vapour proof lights to be installed on 4' max. centers, completely inner wired,
- iii. COMPONENT HARDWARE VXS-100-PX-WG SERIES or approved equal. Provide duct collar 5" high, size as shown on drawing fully welded to be connected to ventilation system by VAC contractor.
- iv. Provide necessary space and facilities to install fire extinguishing system (specified elsewhere in general specifications or by others).

9.29. Wall Flashing

- i. Provide 18 ga. wall flashing from 1" above bottom edge of hood or as shown in cut sheet down to 1" below top edge of equipment.
- ii. Apply to wall with heat resistant epoxy.
- iii. Joints shall be vertical only, sealed with silicone and trimmed with 1" wide stainless steel snap-on moulding, COMPONENT HARDWARE SERIES J60 or approved equal.

9.30. Wall Hung Shelves And Cabinets

The Kitchen Equipment Contractor shall verify supporting requirements for all wall hung shelves, racks, cabinets etc.

9.31. Angle Trolley G/N

The trolley shall be off fully welded stainless steel construction, with frames, cross bracing and support bracing of 25mm (1") x 25mm (1") square tube 2mm thick, bottom bracing in Z- shape for nesting , supplied with heavy duty castors with non-marking, elastic tyres, two with brakes, diameter 150mm (5.1") and corner bumpers, total height to be 1600mm (5' 1"), 16 pairs of tray slides welded to vertical post equally spaced between top & bottom to accommodate 2/1 GN tray .

9.32. Bakery Trolley E/N

The trolley shall be off fully welded stainless steel construction, with frames, cross bracing and support bracing of 25mm (1") x 25mm (1") square tube 2mm thick, bottom bracing in Z- shape for nesting , supplied with heavy duty castors with non-marking, elastic tyres, two with brakes, diameter 150mm (5.1") and corner bumpers, total height to be 1600mm (5' 1"), 16 pairs of tray slides welded to vertical post equally spaced between top & bottom to accommodate EN tray.

9.33. Hand Wash Sink

The hand wash sink shall be constructed in stainless steel consisting of a base frame with sink of 250 x 350 x 200mm (deep) and cabinet base with swing door below to accommodate waste bin by operator. With backsplash to suit adjacent equipment and side splashes where applicable. Supply one mixing faucet for hot and cold water with electronic sensor, towel and soap dispenser.

9.34. Stock Pot Stove

The pot shall be constructed with heavy duty legs, bracing , housing for burners and cast iron grates with a typical dimension of 650 X 550 X 500mm H with backsplash of 150mm H . The burner shall be 3 step coronation burner rated 48 000 kcal/h with 3 controls, central shut off valve, flame failure device and pilot light.

9.35. Charcoal Grill

The charcoal grill shall be constructed of stainless steel body with frames with side and rear splash guard, adjustable removable cast iron grates, cast iron grates to hold charcoal, burner protection cover, removable ash drawer, removable front panel, control valves, 17 650 kcal/hr burner at every 300mm equally spaced, pilot light, flame failure device and flue riser.

9.36. Bain Marie With Heated Cabinet

The bain marie shall be constructed fully in stainless steel with rockwool insulation to hold cooked food at 60°C and above. Wet bain marie to accommodate 4 x 1/1 GN with submersible water inlet, removable frames to hold other combination of GN pans, automatic over flow, drain outlet, thermostatic controls for 30 - 100°C with indicated light, perforated bottom shelf over heating element, low water cut off. And heated cabinet below with sliding doors, air distribution fan, controls, rockwool insulation and M&E service compartment.

9.37. Heated Cabinet

The heated cabinet shall be constructed fully in stainless steel with rockwool insulation, sliding door, thermostatic controls for 30 -100°C, intermediate perforated shelf, removable perforated panel on top of dry heating element air distribution fan, M&E services compartment with light indicators.

9.38. Pot Wash Sink

Substructure shall consist of soak cross bracing, legs and sink sanitizer. Table top shall have soak sink, wash sink and sanitization sink with 300mm high backsplash. Soak sink and wash sink shall be separated by decant over flow wells and removable strainer basket with two lift rods. Sanitization sink shall have a sink sanitizer.

9.39. Dish Landing Table

Substructure to be open to accommodate mobile equipments with cross bracing between legs (no long bracing) Table top to accommodate a pre rinse sink of 450x 450 x 300, pre rinse unit, 20mm deep recess for the flow of dish racks. Table top to slope towards the sink and lip for hooking of dishwasher. Superstructure to have table mounted two tier over shelve, lower shelve extended and inclined towards landing side turned up 50mm at 1450MM from finish floor to lowest part of rack shelve, with drain to connected to flexible hose to table top. Table top height to be coordinated with dish washing machine.

9.40. Dish Exit Table

Substructure to be open below to accommodate dish trucks with cross rails and long rail at the back or with bottom shelve with slides for dish racks. Table top to be supplied with 20mm deep recess for dish racks 300mm high backsplash. Lip to hook dishwasher. Install with fall towards dishwasher.

9.41. DISH EXIT TABLE WITH ROLLERS

Substructure to be open below with cross rails and long rail at the back. Table top to be provide with trough to accommodate 50mm dia. PVC free rollers, with drain pipe. Rollers shall be easily removable for cleaning and spaced at 200mm distance away (centre to centre), 300mm backsplash.

9.42. Rack Shelve (Slanted)

Substructure to be slanted (28°deg) rack shelve to accommodate dish rack either welded to slot rack shelve above or self contained mounted to wall, with drain pipe connected to flexible hose.

9.43. Rack Shelve (Slotted)

Superstructure to be square tube frame construction with slots for racks to be wall or ceiling mounted, 10mm dia. dividers separating each rack slots. Bottom part welded to rack shelve or self contained.

9.44. Electrical Compartment

Item to be a cabinet base with a swing door, inside to accommodate electrical power points and switches by contractor, corresponding with the Electrical Rough-In Layout Plan. Top section of cabinet is equipped with water-proofed sockets with stainless steel flip-up cover. Cover shall also have cutouts for appliances wire to go through.

9.45. Storage Shelves Square Tube (Dishwash Storage)

Constructed with 4 nos of 40 X 40 mm square tube post with 4 tier shelves. Shelves shall be constructed with 32 x 32mm square tube frames and members.

9.46. Grid Shelving

Shelving shall be constructed with 32 x 32 mm square tube open frames, with square tubes welded horizontally and mounting brackets. Brackets shall not be more 1200mm centre to centre apart.

9.47. Soaking Trolley

Tub shall have fully coved vertical and horizontal corners with integral rim at the top. Provide castors with brakes, cross bracing, legs perforated bottom plate and rotary waste valve with strainer.

9.48. Linen Trolley

Item to be constructed with 32 mm dia. tube frames, castors stainless steel hooks welded on each side of underside of upper tube to receive heavy duty canvas laundry bag. Open bottom shelf with 6mm dia. rods welded horizontally. Provide with 2 nos. heavy canvas bag with upper envelope seam with integrated cord to close with 4 nos. brass eyes each side to fit in linen trolley.

9.49. Flour Rack

Substructure shall be open with legs, cross and support bracings and frames. Open base to accommodate floor bins. Top section shall be cabinet open on the front and top to accommodate flour bags. Internal sides and bottom shall have rubber bumper with S/S strip rubber holder at 100mm apart center to center.

9.50. Wooden/ Marble Top Table

Substructure shall be open to accommodate flour bin with cross bracing and legs. Table top have frame construction with bracings to accommodate wooden (50mm thick)/ marble (25mm thick) top. Wooden/marble top to be food grade type. Table top corners to have protection taps.

9.51. Indian Pot Wash Sink

Substructure shall be open base legs, cross rails and support legs welded to sink bowl. Top to have sink, with removable grid plate flush with sink top, backsplash and pre rinse unit. Refer drawings for sink bowl size. Height shall be 650 from top sink to floor finish.

9.52. Praline Cabinet

The Praline cabinet shall be constructed with swing door and tray slides to accommodate 600 X 400MM EN trays at 70 mm spacing centre to centre horizontally. Refer cut sheets and drawings for details.

9.53. Cake Ring Rack

The ring rack shall consist of heavy duty two tier wall mounted bracket 100mm high with slanted horizontal 12mm dia rods welded at 300mm apart for cake ring rings and utensils.

9.54. Butcher Bin

Basin with fully coved vertical and horizontal corners with integral rim at the top, 4 nos. swivel castors, 2 with brakes and perforated bottom panel. Accessories: Stainless steel 1/2 sliding lift-off lids.

9.55. Fish Prep Sink

Substructure with open space below for waste bin with cross rails on the sides and rear, table top with sink, 100(W) X 200 (D) drain trough with perforated basket at the back, table top to sloped towards drain trough with 25mm thick removable nylon cutting board chrome plated spray pipe in front of preparation section with deflector , pre rinse unit and backslash. Accessories: 1 no. 25mm thick white thermoplastic cutting board size as per plan, affixed onto table tap via stainless steel studs, easily removable for cleaning.

9.56. Thawing Trolley

Item to be provided with 4 nos. slanted drain shelves with perforated drain panels for each shelf , drain shelves are slanted towards drain, drain tube to be welded into each drain shelf, drain tube shall be welded from bottom of top shelf to top edge of shelf below less 50mm, supply with 1 no. bottom pan to collect condensed water with drain cock, total height 1600mm.

9.57. Work Cabinet With Bain Marie And Rice Warmer

Substructure to be open cabinet, all insulated in 1" thick rockwool, MnE services compartment with accessible door, thermostatic controls for 30 - 100°C range with indicator light, table top with bain marie for 4 nos. 1/1GN pan, bottom with fall to drain, standpipe and perforated bottom shelf over wet heating element, thermostatic controls with low water cut-off provided with submersible hot water inlets, waste drain and rice warmer with dry heating element. Top to have cut out for rice container. Cut outsize of rice warmer to be coordinated .

9.58. Tray /Cutlery Trolley

Substructure 32 mm $\square \emptyset$ stainless steel tubular construction, low and top shelf, 4 nos. heavy duty swivel castors with 2 nos. brakes, superstructure with fully enclosed cutlery container to accommodate 5 nos drop in plastic cutlery inserts.

9.59. Cold Pan

Substructure open base cabinet with low shelf . Counter top to have 25 mm thick insulated ice chest with stainless steel perforated pan and drain outlet.

9.60. Tray Slide (Tube)

Constructed from 3 nos. polished stainless steel tube with round end caps welded. To be installed with STANDARD KEIL #1509-101-01251 trayslide brackets fixed to wall/ counters. Equally spaced in intervals of not more than 1200mm.

9.61. Tray Slide Cabinet

Backsplash of trayslide top to be turned up approximately 60mm with a radius of 15mm to fit under front edge of dishout table, tabletop to have 3nos die stamp inverted (45 °) "V" ,substructure to be an open cabinet with intermediate and low shelves with double pan dividing panels equally spaced in intervals of not more than 2000mm long.

9.62. Mobile Bussing Station

Substructure to have intermediate and bottom shelf with 25mm turn ups on all side with 4nos of heavy castors two numbers with brakes. Table top with cut outs to accommodate 3nos of 1/1 GN pans . Accessories : provide three numbers of 1/1 GN pans.

9.63. Utility Trolley

Item shall be constructed with 32mm square tubes , castors 4 nos castors 2 nos with brakes, top ,intermediate and bottom shelf.

9.64. Vegetable Trolley

Tub shall have fully coved vertical and horizontal corners with integral rim at the top, 4 nos castors 2 nos with brakes ,cross bracing ,legs and rotary waste valve with overflow pipe. A removable perforated basket insert with hooks and handles . The base of the perforated basket shall be 50mm above the base of tub.

9.65. Seafood Trolley

Tub shall have fully coved vertical and horizontal corners with integral rim at the top, with 4 nos castors 2 nos with brakes, handles and waste drain valve . Base of tub shall have a removal perforated panel.

9.66. Charcoal Trolley

Item to be constructed in mild steel and painted. Bin with fully coved vertical and horizontal corners with integral rim at the top with removable cover and handle . Provide removable sieve inside bin. Capacity of bin shall 30 kg, with 4 nos heavy duty castors , 2 nos brakes.

9.67. Waste Bin Drying Rack

Item is a heavy duty 2 tier removable slatted shelving each with 2 reinforcement C- channels. Height and depth of rack to be coordinated with operator .

9.68. Bussing Trolley

Open substructure with low and intermediate shelf with turnups on all side, heavy duty wheels two with brakes. Recessed table top accommodate dish racks.

9.69. Japanese Sink

Open substructure with legs and cross rail at the back and sides . Table top with sink, recessed to accommodate 75mm thick removable cutting board with support frame screwed to cutting board and with pre rinse unit.

9.70. Stainless Steel Die Top W/Finger Hole

Item shall be a stainless steel cover plate to flush fit sink top opening, with finger hole for easy removal Edges of plate shall be turned down 90 deg and 90 deg again at the front and back.

9.71. Protective Coverings

Fabricated stainless steel equipment shall be protected with a coat of masking material;SHURFORD'S SURETAPE, CROWN ZELLERBACH CORPORATION, or approved equal. The protective covering shall be applied to all exposed flat, horizontal and vertical surfaces. It shall not be removed until the installation has been completed, the site is cleared of all debris, and the equipment is ready for testing.

9.72. FASTNERS

Exposed screw or bolts will not be permitted on the surface of fixtures. Rivets, if specified, shall be countersunk, flush and of the same material as the pieces joined together.

9.73. HEATING EQUIPMENTS

1. Gas, electrical or steam heated equipment and thermostatic controls shall be complete and of material, size and rating as required by the contract documents. Such equipment shall be fabricated and installed so as to be readily cleanable or easily removed for cleaning.
2. Electric appliance or heating element circuits of single phase voltage shall not exceed 2000 watts, unless otherwise

specified.

3. Built-in steam heated equipment shall be complete with steam by pass control system, including brass fittings, valves, traps, strainers and pressure reducing valve (if required) ready for final connection.
4. Globe control valves shall be provided with heat resistant handle positioned in recessed panel in front of equipment.
5. All electric or steam heated warming cabinets shall be completed with air distribution fans to maintain uniformity of temperature within heating space. The air distribution mechanism shall be blow-through type with hot air discharged at low level and returned at high level.
6. The thermal insulation material to be used for all heated warming equipment and side panels of all air blast type wok/steamer ranges shall be robust type consisting of long fine fibres spun from molten natural rock bonded with a thermosetting resin, 25mm (1") thick with maximum service temperature of 450°C, 0.05 W/mK at 100°C; fire, moisture and corrosion resistant as manufactured by BRADFORD ROCKWOOL type FIBRETEX-450 or approved equal.

9.74. SWITCHES, CONTROLS AND ELECTRICAL WORK

1. Provide each motor driven appliance or electrical heating unit with suitable control switches or starter of proper type.
2. Provide internal wiring for fabricated equipment, including all electrical devices, control wiring, switches etc., built into or forming an integral part of such equipment with all components wired to a junction box, or breaker panel, ready for final connection.
3. Provide BS approved type plug with suitable length three (3) wire cord for equipment powered by plugging into single-phase, grounding type socket outlet. Provide earthing protection for indigenous equipment by connecting earthing conductors from equipment body to common earthing point mounted on wall or floor in accordance with current regulations and local codes.
4. Provide light fixtures and ballasts, where specified or detailed as part of counters, cases, or fixtures. Provide warm white lamps for light fixtures.
5. Provide Waterproof socket outlets 13A and 15A according to BS standards and wiring for fabricated equipment as called for in the contract documents.

9.75. QUIETNESS OF OPERATION

Quietness of operation of all foodservice equipment is a requirement. The CONTRACTOR shall be required to remove or repair any equipment producing objectionable noise, in the opinion of the Arc.

9.76. INDIRECT DRAINS

Provide 1" (25.4mm) minimum copper line extended to nearest floor sink or drain where code of usage requires equipment to have indirect drains. Drain lines for ice water drainage shall be fully insulated. Condensate drains for all refrigerated equipment such as ice machines, cabinets, sandwich units etc., shall be provided with an S-trap or P-trap for sanitation reasons.

9.77. VENTILATION OF REFRIGERATED EQUIPMENT

1. Adequate air supply and exhaust shall be provided for all refrigeration condensing units, both fabricated and manufactured as required for proper operation at 1000 m³Hr per kw for supply and exhaust.
2. If, in the opinion of the CONTRACTOR, additional ventilation is required to insure proper operation of condensing units, he shall so state in writing to request for evaluation and decision before proceeding with fabrication and installation.

9.78. DOORS

All items with doors shall be hinged per specifications plans and details.

9.79. GAS FIRED EQUIPMENT

Gas fired equipment shall be fabricated to operate on type of gas made available for the project in concern.

9.80. PLASTIC LAMINATE

Plastic laminated material specified for millwork or other areas, shall be of the OKULEN type non-toxic or approved equal suitable for foodservice operations. Laminates shall be veneered with a Urea based adhesive, waterproof and heatproof. Rubber based adhesives are not acceptable. Adhesive shall be applied directly over close-grained, marine, Douglas Fir, plywood of selected smooth sanded stock to insure a smooth ripple-free laminated surface. Vertical panels may be cored with 1/16" (1.6mm) material and corresponding back faced with 1/32" (0.8mm) backing material. Self-edges shall have top sheet placed on and over edge sheet.

9.81. PREFABRICATED WALK-IN REFRIGERATORS AND FREEZERS

SCOPE OF WORK

The work to be performed under this section of the Specifications shall consist of the supply, delivery to site, installation, testing, commissioning and maintenance of prefabricated Walk-in Refrigerators and Freezers all as per the 'Schedule of Equipment' appended here to comprising of but not necessarily limited to the following: -

- Pre-fabricated wall floor and ceiling insulation panels.
- Ceiling support structure where required.
- Doors complete with all door furnishings.
- Lighting fittings and switches.
- Temperature alarm system.
- Digital and dial thermometers.
- Pressure relief vents.
- Coil supports.
- Utility penetrations.
- Escutcheon plates and finish trims.
- All electrical works complete with panels.

All as hereinafter more fully described and shown on the Drawings, also including such minor works as are necessary for the proper carrying out of the installation and operation whether or not, such works are specifically called for in the Specification and Drawings.

9.82. MODULAR PANEL CONSTRUCTION

Modular panel sections shall be available in the following standard panel width:

- Walls, centre ceilings, centre floors: 11-1/2", 23", 34-1/2" & 46".
- End ceilings, end floors: 23" & 34-1/2".
- Horizontal and vertical tee sections (at partitions): 11-1/2" & 23".
- Coved corners: 11-1/2" X 11-1/2" pre-formed, one piece to ensure perfect alignment.
- Heights: 8' 6". (Actual height to verify with site conditions).

The interior and exterior metal pans shall be exactly formed with metal dies to ensure panel uniformity and thus ensure

interchangeability with like panels. Metal panels shall have an inside preparation coat of bonding agent to create adhesion with the polyurethane insulation and enhance the chemical bonding capabilities of the foam. Metal panels shall be as described in paragraph 4.05, "Finishes." Insulation shall be rigid polyurethane as described in paragraph 4.03.

The metal pans shall be placed in steel moulds with polyurethane injected into the mould to form a rigid insulation. It must be "foamed-in-place", and form a chemical bond to the interior and exterior metal pans to form a strong, dimensionally stable panel unit.

Panels shall be made without internal wood or metal structural members, with 100% of each panel exclusive of metal pans and locking devices being polyurethane insulation.

Panel edges shall be tongue and groove configuration to assure proper alignment and air-tight, vapour-proof joints.

A double set of gaskets at both interior and exterior edges shall be provided, "foamed-in-place". Gasket material shall be oil resistant and form a tight, positive seal.

To divide walk-ins into more than one compartment, modular partition panels shall be utilised. Partition panels shall cam-lock into special wall, ceiling and floor tee sections. For proper alignment, corner tee sections shall be one piece, 90° and have an overall standing leg dimension of 11-1/2".

9.83. INSULATION

Insulation shall be rigid, 40Kg/M³ foamed-in-place polyurethane chemically bonded to interior and exterior metal surfaces. Wall thickness shall be a full four inches with a closed cell rating of not less than 97%. The thermal conductivity ("K") factor shall not exceed 0.117 BTU per hour/foot square/F°/inch. Overall coefficient of heat transfer ("U") factor shall not exceed 0.029 with a resulting "R" value of 34, where R is the total thermal resistance of the wall section. The insulation must remain stable at an operating temperature range of minus 40°C to plus 120°C.

9.84. SECTION FASTENING

All modular panel sections shall be locked securely together with cam-lock fasteners consisting of a cam action hooked locking arm placed in the tongue section and a steel rod positioned in the groove section. Locking arm and steel rod shall be contained within metal housings. By the rotation of the locking arm, the hook shall engage over the rod and draw the panel sections tightly together. Locking arms shall be actuated from inside the walk-in by means of a standard hexagonal wrench provided as part of the walk-in. Press-fit caps shall be provided to close wrench holes. There shall be not less than three cam-lock fasteners in each vertical joint. Horizontal placement of cam-locks at wall/ceiling or wall/floor juncture shall not exceed 23" interval.

9.85. FINISHES

The interior finish of walls and ceilings except as specified otherwise shall be provided as specified, except for floors which shall be tiled or monolithic floor finish (wet works by builder) with up to 300 pounds per square foot uniformly distributed loading. The inner floor surface of coldroom floor shall be properly coordinated with door opening and exterior floor finish by CONTRACTOR to prevent a ramped in situation unless prior approved by the kitchen consultant. The exterior and interior wall finish shall be of 0.7mm stainless steel No.4 finish unless otherwise specified. A pre-approved wall protection bar shall be provided on all exterior exposed walls (except where stainless steel is specified).

9.86. WALK-IN DOOR SECTIONS

Door furnished with walk-ins shall be hinged, in fitting, flush mounted type where hinged doors have been specified. Standard door sizes shall be as follows: 34" X 78" clear opening sizes in 46" wide panels. Door leaf and door panel construction shall be as described in paragraph 4.02. Door panel opening shall be reinforced with a special high strength plastic frame to prevent cracking or distortion. Metal framing shall not be used for this purpose in order to minimise heat conduction through the wall section at door. All door openings shall be provided with one heater cable for condensation control installed beneath a removable metal cover at the sides and top of jambs and across

floor beneath sill plate. Additionally, doors of walk-ins operating below +32 ° F shall have two heater cables installed around perimeter of door leaf at gasket contact area. One cable is active and the second shall act as a spare in the event of a malfunction of the primary cable. Door panel shall be equipped with an interior vapour proof light which shall be electrically linked to all other lights within a particular coldroom; all wired to an external single-phase/50Hz power switch. The CONTRACTOR shall provide a 60w vapour proof bulb with shatter-proof cover to specifications for every 100 sq.ft. of coldroom floor. Provision shall be made by the Kitchen Equipment Contractor to wire all door heaters to the relevant refrigeration main control panels. Door panel shall be equipped with a 2" diameter flush mounted dial thermometer providing temperature readings in a range of -25°C to +30°C. Dial thermometer for freezers shall be mounted on the panel of the external chiller panel. All coldroom doors shall be self closing when angle between front panel and door is 45° or less. All coldrooms that opens to any kitchen area is to be fitted with a jet air curtain to be separately specified, where jet curtains not provided, strip curtains shall be provided, when a double action swing door is not specified.

9.87. Sliding Door

Single slide entrance doors are made to slide horizontally to the left (or right) by manual operation. The sliding door(s) are to be at minimum 4" thick. They are to slide freely on metal tracks with steel rollers. Finish, construction and insulation of the door and door panel shall be similar to the swing door specifications as afore mentioned. Heaters are provided to eliminate condensate or frost formation. The door contains padlocking provisions and includes an inside safety release. Gaskets are to be resistant to oil, fats, water and sunlight and are to be of a replaceable type and shall form a positive, tight seal. The exterior and interior finish of all doors shall be stainless steel except when specified otherwise.

9.88. HARDWARE FOR STANDARD WALK-IN DOORS

A latch and strike assembly shall be used and shall be die cast metal with polished chrome finish. Latch shall have provisions for padlocking but shall have inside emergency release so that door can be opened from the inside even though padlocked on the outside. Hinges shall be of a style and finish to match the latch and strike assembly. For 34" width-in clear doors, hinge blade shall not be less than 9" long. Two hinges shall be used. For 48" width-in-clear doors, hinge blade shall be not less than 15" long. Three hinges shall be used. Hinges shall be self-closing, cam-lift type with Delrin bearings and stainless steel pins; hardware to be COMPONENT HARDWARE SERIES W60 or approved equal.

9.89. MISCELLANEOUS EXTRAS

- Observation Windows. Double glass sealed units. Standard size 12" x 18".
- High temperature alarms. A high temperature alarm facility shall be provided for each coldroom box and shall consist of a time delay thermostatic device that picks up a signal when the room temperature rises 7 degrees and above from set point and remains so for more than 30 minutes, to activate an audio alarm of 110db capacity.
The alarm shall be located in a 24hour manned security area. The manual reset of the high temperature alarm shall be located inside the control panel for the coldroom, with only supervised access (keyed switch).

Facilities shall be provided for the signal to be picked up by the BAS (by others).

9.90. COLDROOM CONTROL PANELS

- a) All coldrooms on the same floor shall have their control panels located in the same location. The control panel shall indicate the status of each coldroom, with the following information compressor run, blower run, defrost, normal supply, essential supply, trip, condenser water pump run, high temperature alarm, etc..
- b) For water cooled systems, the CONTRACTOR shall provide an interlock between water flow sensing and the compressor motor start to protect the refrigeration system against frequent high pressure cut-outs.

9.91. INSTALLATION INSTRUCTION

- a) The manufacturer shall include with the shipment, complete assembly instructions for the walk-in including installation instructions of the refrigeration equipment when supply as part of the walk-in.

9.92. WARRANTY - 5 YEARS

- a) Manufacturer shall warrant that any part of the installed Walk-in, (except the refrigeration system and its related accessories), is free from defects in material or workmanship under normal use and service, and will be obligated to repair or replace any part of said equipment which proves to be defective within the period of five (5) years, from the date of original installation. This warranty shall not apply to equipment which has been subjected to any accident, alteration, abuse, misuse or improper installation and does not include any labour charges for replacement or repair of defective parts of refrigerant.

9.93. FIRE EXTINGUISHING SYSTEM

9.94. WET CHEMICAL FIRE EXTINGUISHING SYSTEM

The wet chemical fire extinguishing system shall be an automatic, pre-engineered system, cartridge operated, regulated pressure type, with a fixed nozzle agent distribution network as manufactured by ANSUL R-102 or approved equal. It shall be listed with Underwriter's Laboratories Inc (UL) and conform to the codes of NFPA. The system shall have fire suppression capabilities for the following kitchen hazard areas related to cooking equipment; ventilating structures including hoods, ducts, plenums and filters; fryers, griddles and range tops; natural charcoal or chain-type broilers; electric, lava rock or gas-radiant char-broilers and woks. The system shall be capable of automatic detection as well as actuation with local or remote manual actuation. The power or fuel supply to the kitchen hazard areas mentioned above shall be shut-off automatically upon actuation of the extinguishing systems by means of approved electrical shut down devices. All shut down devices shall be considered integral parts of the fire extinguishing system and shall function with the system and shall function with the system operation. All such devices shall be of the type requiring manual resetting prior to fuel or power being restored.(NFPA Bulletin #17 - 4.4) The system shall be capable of reacting during the first critical stages of a fire emergency before extensive damage occurs. The chemical agent shall be of the wet type in accordance with NFPA Bulletin #18 and shall be capable of reacting with hot grease or oil coating to form a blanket of foam that:

- is non-ignitable
- reduces the release of combustible vapour
- seals off unreacted fuel from atmospheric oxygen
- cools the fuel on the appliance surface, further reducing the possibility of a fire reflash.
- can be easily and quickly cleaned up after a fire
- A detailed technical manual shall be supplied including system description, design,
- installation, recharge and maintenance procedures plus accessory installation and reset instructions.

9.95. SYSTEM EQUIPMENT

a) Regulated Release Mechanism

The regulated release mechanism shall be the spring-loaded, mechanical/pneumatic type capable of providing the expellant gas supply to agent tanks. It shall contain a factory-installed regulator set at 100 psi (6.9bar) with an internal relief of approximately 145 psi (10.0 bar). In the "armed" position, the main spring force to the puncture pin piston shall be 150lb (68kg). The mechanism shall have a visual indicator of the armed or fired condition without having to open the enclosure.

The regulated release mechanism shall have the following actuation capabilities: automatic actuation by a fusible link detection system; remote manual actuation by a mechanical pull station; local manual actuation by a push button located at the front of the release mechanism enclosure.

The regulated release mechanism shall contain an actuator assembly, regulator, expellant gas hose, and

storage agent tank housed in a stainless steel enclosure with cover. The enclosure shall contain knock-outs for 1/2in. conduit. The cover shall contain openings for the push button and visual indicator. The regulated release mechanism shall be compatible with electrically operated shut-off devices for appliances.

b) Fire Extinguishing Agents

Fire extinguishing agents shall be specially formulated, aqueous solutions of inorganic salts. These agents shall be pre-mixed, eliminating the need for dilution before system charging. They shall be designed for fast flame knock-down, securement of grease-related fires, cooling effect which further enhances its ability to prevent fire re-ignition, and ease of recharge and post-fire cleanup. These agents shall be environmental-friendly and shall produce non-toxic by-products.

c) Storage Tank and Bracket

The liquid agent storage tank shall be deep drawn carbon steel chrome-plated with a 3 gallon (11.4 L) capacity. The shell assembly shall meet the following pressure test requirements: 100 psi (6.9 bar) working pressure, 300 psi (20.7 bar) test pressure, 600 psi (41.4 bar) minimum burst pressure. The tank shall include a chrome-plated adaptor/tube assembly complete with welded steel bracket for mounting of additional tanks in a minimum amount of space. These agent tanks shall be secured with hinged bracket bands.

Note : The CONTRACTOR shall provide sensors with tap-off points for each system for interconnecting by others to the Building Automation System.

d) Cartridges

The cartridge shall be a sealed steel pressure vessel containing either carbon dioxide or nitrogen gas. The cartridge seal shall be designed to be punctured by the releasing device supplying the required pressure to expel wet chemical agent from the storage tank.

e) Supply piping

Piping is used to distribute extinguishing agent to discharge nozzles. The piping shall be stainless steel pipe conforming to ASTM A10

f) Discharge Nozzles

Each discharge nozzle shall be tested. Nozzle placement shall be determined by the size of the orifice in the nozzle tip. The nozzle tip shall be brass or chrome-plated brass, and stamped with the part number and flow rating. The nozzle tip retainer and body shall be chrome-plated brass. The nozzle strainer shall be a brass with stainless 50 mesh screen. Each nozzle tip shall be covered by a protective blow-off cap.

g) Automatic Detection System

The regulated release assembly shall be compatible with a fusible link detection system. The fusible link shall be provided above each cooking appliance and at the entrance to the duct according to the operating temperature in the ventilating system.

The fusible links shall be rated as follows:

Fusible Link Temperature Rating	Use Where Operating Temperature Does Not Exceed
280°F (130°C)	225°F (107°C)
360°F (182°C)	290°F (143°C)
450°F (232°C)	360°F (182°C)
600°F (260°C)	400°F (204°C)

The fusible link shall be supported by a detector bracket/linkage assembly which shall have provisions for connecting 12mm (0.5") rigid or EMT thin wall conduit and 1.6mm diameter flexible stainless steel rope. Changes in the direction of the conduit and steel rope shall be accomplished with die cast aluminium alloy, 90 deg. pulley elbows.

9.96. DUAL AGENT FIRE EXTINGUISHING SYSTEM

The dual-agent fire extinguishing system where employed shall be a pre-engineered, fixed, automatic fire extinguishing system utilising a liquid fire suppressant and water as manufactured by *Ansul PIRANHATM Restaurant Wet Agent Fire Suppression System or approved equal*. It shall be constructed in compliance with NFPA 96, NFPA #17A, UL Listing, and International Association of Plumbing and Mechanical Officials Interim Guide IGC 113-97.

The system shall have fire suppression capabilities for the following kitchen hazard areas related to cooking equipment; ventilating structures including hoods, ducts, plenums and filters; fryers, griddles and range tops; natural charcoal or chain-type broilers; electric, lava rock or gas-radiant char-broilers and woks.

The system shall be capable of automatic detection as well as actuation with local or remote manual actuation. The power or fuel supply to the kitchen hazard areas mentioned above shall be shut-off automatically upon actuation of the extinguishing systems by means of approved electrical shut down devices. All shut down devices shall be considered integral parts of the fire extinguishing system and shall function with the system and shall function with the system operation. All such devices shall be of the type requiring manual resetting prior to fuel or power being restore

The system shall be capable of reacting during the first critical stages of a fire emergency before extensive damage occurs. The chemical agent shall be of the wet type in accordance with NFPA Bulletin #18 and shall be capable of reacting with hot grease or oil coating to form a blanket of foam that :

- is non-ignitable
- reduces the release of combustible vapour
- seals of unreacted fuel from atmospheric oxygen
- cools the fuel on the appliance surface, further reducing the possibility of a fireflash.
- can be easily and quickly cleaned up after a fire

A detailed technical manual shall be supplied including system description, design, installation, recharge and maintenance procedures plus accessory installation and reset instructions.

In contrast to the R102 system, the PIRANHA system shall utilise a liquid fire suppressant *and* water. Water has long been recognised as a highly efficient extinguishing agent. Nevertheless, water alone on a fuel fire loses its extinguishing and cooling advantage before enough water can be introduced to begin reducing the fuel temperature. The PIRANHA system has been developed based on the benefits of water in extinguishing fires.

In extinguishing a kitchen fire, the PIRANHA system shall discharge the fire-extinguishing agent immediately followed by water spray. The existence of water helps replenish the foam blanket formed by the agent until the fuel temperature has fallen below its re-ignition temperature. The replenishment of the foam blanket shall maintain a secure surface throughout the cooling process. Within two minutes, the fuel temperature shall be brought down below the re-ignition temperature.

9.97. SYSTEM EQUIPMENT

a) Regulated Release Mechanism

The regulated release mechanism shall be the spring-loaded, mechanical/pneumatic type capable of providing the expellant gas supply to agent tanks. It shall contain a factory-installed regulator set at 150 psi (10.3 bar) with an internal relief of approximately 190 psi (13.1 bar). The mechanism shall have a visual indicator of the

cooked or fired condition without having to open the enclosure.

The regulated release mechanism shall have the following actuation capabilities: automatic actuation by a fusible link detection system; remote manual actuation by a mechanical pull station; local manual actuation by a push button located at the front of the front of the release mechanism enclosure.

The regulated release mechanism shall contain an actuator assembly regulator, expellant gas hose, and storage agent tank housed in a stainless steel enclosure with cover. The enclosure shall contain knock-outs for 1/2in. conduit. The cover shall contain openings for the push button and visual indicator.

The regulated release mechanism shall be compatible with electrically operated shut-off devices for appliances. The regulated release assembly shall contain an anti-siphon valve to prevent back-siphonage of possible contaminated water into the potable water supply.

b) Fire Extinguishing Agents

Fire extinguishing agents are specially-formulated, aqueous solutions of inorganic salts. These agents are pre-mixed, eliminating the need for dilution before system charging. They are designed for fast flame knock-down, securement of grease-related fires, cooling effect which further enhances its ability to prevent fire re-ignition, and ease of recharge and post-fire cleanup. These agents shall be environmental-friendly and shall produce non-toxic by-products.

c) Water System

This feature is only required by the PIRANHA system. The water supply pressure is set from 30 to 100 psi. The water pipe size is 3/4" for 1 and 2 tank system; 1" for 3 tank system. The water supply piping must include a shut off, lock in position type valve (provided by M&E) to allow authorised personnel to close the valve after a system actuation and stop the flow of water into the hazard area. A water shutdown device shall be installed in the water supply piping. This device shall automatically shutdown the flow of water to the discharge nozzles approximately 10 minutes after system actuation.

d) Storage Tank and Bracket

The liquid agent storage tank shall be deep drawn carbon steel chrome-plated. The tank shall be available in three sizes; 1.5 gallon (5.7 L), 2.25 gallon (8.5 L), and 3.0 gallon (11.4L). The shell assembly shall meet the following pressure test requirements: 150 psi (10.3 bar) working pressure, 450 psi (31.0 bar) test pressure, 900 psi (62.1 bar) minimum burst pressure.

The tank shall have a valve that is designed to discharge dual agent onto the hazards being protected. The valve shall automatically shuttle to switch from wet chemical agent discharge to water discharge.

The tank shall include a chrome-plated adaptor/tube assembly complete with welded steel bracket for mounting of additional tanks in a minimum amount of space. These agent tanks shall be secured with hinged bracket bands.

Note : The CONTRACTOR shall provide sensors with tap-off points for each system for interconnecting by others to the Building Automation System.

e) Cartridges

The cartridge shall be a sealed steel pressure vessel containing either carbon dioxide or nitrogen gas. The cartridge seal shall be designed to be punctured by the releasing device supplying the required pressure to expel wet chemical agent from the storage tank.

f) Supply piping

Piping is used to distribute extinguishing agent to discharge nozzles. The piping shall be stainless steel pipe conforming to ASTM A106.

g) Discharge Nozzles

Each discharge nozzle shall be tested. Nozzle placement shall be determined by the size of the orifice in the nozzle tip. The nozzle tip shall be brass or chrome-plated brass, and stamped with the part number and flow rating. The nozzle tip retainer and body shall be chrome-plated brass. The nozzle strainer shall be a brass with stainless 50 mesh screen. Each nozzle tip shall be covered by a protective blow-off cap.

Once actuated, the system discharges a fixed amount of wet chemical agent followed by water through all the same discharge nozzles.

h) Automatic Detection System

The regulated release assembly shall be compatible with a fusible link detection system. The fusible link shall be provided above each cooking appliance and at the entrance to the duct according to the operating temperature in the ventilating system.

The fusible links shall be rated as follows:

Fusible Line Temperature Rating	Use Where Operating Temperature Does Not Exceed
280°F (130°C)	225°F (107°C)
360°F (182°C)	290°F (143°C)
450°F (232°C)	360°F (182°C)
500°F (260°C)	400°F (204°C)

The fusible link shall be supported by a detector bracket/linkage assembly which shall have provisions for connecting 12mm (0.5") rigid or EMT thin wall conduit and 1.6mm diameter flexible stainless steel rope. Changes in the direction of the conduit and steel rope shall be accomplished with die cast aluminium alloy, 90 pulley elbows.

9.98. ACCESSORY EQUIPMENT

The following accessory equipment shall be available, and shall be compatible with the selected fire suppression system:

a) Remote Manual Pull Station

If the release assembly is not accessible to manual actuation, a remote manual pull station shall be provided as the primary means of manual actuation. The pull station shall be the glass break-rod type, and shall be connected to the release assembly trip lever by means of a 1/16 in. (1.6mm) diameter stainless steel rope and 1/2 in. conduit. The pull station shall be located at a distance of not more than 125 ft. (38m) from the release assembly and along the fire escape path.

b) Fuel Shut-Off Devices

The CONTRACTOR shall provide electrical auto-disconnect devices where applicable in conjunction with the fire detection system. This is required to isolate the fuel supply to the fire source. The installation of the devices shall be co-ordinated with other trades to ensure compatibility.

c) Fire System Cabinet

This stainless steel cabinet provides a mounting location for all system controls and equipment. The cabinet shall be built into wall. CONTRACTOR is to coordinate with builder on cutouts and chasings for pipe work.

d) Chrome Appliance Drops

Chrome sleeving is required for appliance drops and piping in exposed areas.

9.99. ELECTRICAL

9.99.1. CABLE SELECTION AND ELECTRICAL WIRING

Every cable shall be so selected and installed as to be suitable for operation in compliance with the British Standard Specification. The type of insulation and protective covering shall be selected so as to allow compliance with the requirements as to precautions against mechanical damage, damage by heat, fire or explosion, dampness and corrosion.

a) Protection against dampness and corrosion

Every cable shall be installed where it will not be exposed to any form of moisture, oil or corrosive liquid. Wherever they are exposed to such conditions, all metal sheaths and armour of cables, metal conduit, ducts, trunking etc. shall be of corrosion resisting material or finish and shall not be placed in contact with other metals with which they are liable to set up electrolytic action.

Flexible cables and cords which in normal use are exposed to risk of contact with water shall be of a type sheathed with superior PVC. PVC is not to be used for applications where the operating temperature exceeds 70°C or below 0°C (refrigerating rooms).

b) Protection against damage by heat

Every type of cable shall be so selected that the maximum temperature of its insulation, and sheath if any, under normal working conditions does not exceed the appropriate values specified by local code of practice. Special heat resisting flexible cables in compliance with BS 6007 and BS 3456 are to be used for wiring up washable exhaust hoods.

c) Precautions against the spread of fire

Where cables, conduits or trunking pass through fire rated walls, partitions or ceilings, the surrounding hole or space shall be made good with cement or similar fire resisting material to the full thickness of the floor, wall etc.

d) Precaution against mechanical damage

All cables shall be adequately protected against any risk of mechanical damage subject to local code. All surface wiring shall be protected by enclosure in conduit trunking or equivalent mechanical protection subject to conditions stated by local code of practice.

Rigid PVC conduits which are unaffected by water, acids, oil and soils can be safely buried in concrete, plaster or lime. PVC conduits are not to be used where the normal working temperature of the conduits exceeds 60°C. Metal conduits shall be earthed in accordance with local codes. Where steel pipes are used they shall comply with BS 1387 and shall have a corrosion resistant finish inside and outside. The number of cables to pull into a conduit will be based on a space factor of less than 40%.

e) Refrigerating Room

Every refrigerating room including freezing rooms, chilling rooms and other artificially refrigerated space used for the storage of goods shall be regarded as a damp situation. (Unit type refrigerators such as under counters etc. are not applicable). As such the electrical installation shall comply with the requirements of damp situations.

Wiring of such locations shall be of a type which shall not provide pockets or channels in which moisture may accumulate or through which it may pass into apparatus. Where conduit is used it shall be of the screwed or the thermoplastic type and each conduit shall be provided with adequate drainage facilities and shall be sealed by a non setting sealing compound at any point where it passes from the refrigerated to the non refrigerated space. Cables installed in conduits shall be of the tough rubber sheathed or thermoplastic sheathed type. Alternatively, MICS and those suitable for low temperature applications may be used. Cable troughing shall not be used as a cable enclosure. The point of entry of cables into lighting fittings, switches and other apparatus shall be effectively sealed with a non setting sealing compound.

9.99.2. ELECTRIC MOTOR POWER SUPPLY WIRING

- a) The inter-wiring between electric motors, associated starters and other control devices is here-in-before specified to be part of the motorized equipment. In addition to the above, the plumbing work shall, in conjunction with each motor, include a power supply point located in the same rooms as the motor.
- b) The supply point will consist of a joint box provided by the electrical contractor, at the located identified on the electrical drawings. Conductor of adequate length will be provided by the plumbing sub contractor for connecting motor starters and other control devices to the joint box.
- c) Each feeder shall consist of single core wires run in conduit. Sizing of phase legs and conduit shall relate to motor size and shall be in accordance with local standards. Wires carrying the starting, accelerating and load current of motor shall be of rating at least equal to the full load current rating of the motor when rated in accordance with the relevant British Standards. Neutral and earthing wires in addition to those listed shall be included in the conduit for each feeder with the phase leg wires as hereinafter specified, if not specified otherwise elsewhere.
- d) Feeder connections shall be in the phase rotation which establishes proper operation for all equipment supplied.
- e) With each feeder a neutral conductor must (for control wiring supply purposes) be included with the phase leg wires. The neutral wire shall be of the same type as specified hereinafter generally for the feeder wires. It shall be sized according to local regulations and shall be in addition to the earthing wire hereinafter called for. The conduit shall be sized to include the neutral wire.
- f) Conduit for feeders shall be of galvanized steel only. It shall be of the light weight, "slip-on" type having minimum wall thickness which comply with the following :

Nominal Size mm	Minimum Wall Thickness mm
16	1.00
20	1.10
25	1.35
32	1.50
40	1.60
50	1.60
63	1.60
80	1.60
100	1.60

- g) Wires for feeders shall be PVC insulated. Insulation shall be suitable for 70°C conductor temperature, and shall be rated for at least 600 volts (alternating current) line to earth regardless of actual application.
- h) Wires for feeders shall have stranded construction conductors of soft, 98% minimum conductivity, properly refined copper.
- i) Wires for feeders shall be color coded to identify phase, neutral and earthing conductors in strict accordance with the approved standard practice.
- j) Each conduit for a feeder shall contain an earthing wire. The earthing wire shall be of the same type as specified here-in-before generally for the feeder wires. Conduits sizing above accounts for the inclusion of the earthing wire. Earthing wires shall be bonded to the metallic casings of motors, sheet metal pull boxes, and motor control center or individual motor starter enclosures.
- k) The earthing wire in each conduit shall be sized in relation to the phase leg wires in the conduit and in accordance with the following .

SIZE OF PHASE LEG WIRES

MM²

25

4

6

10

16

25

35

50

70

95

SIZE OF EARTH WIRE

MM²

10

25

25

6

6

16

16

16

50

50

- l) Final connections to motor starters which are integrally mounted with motorized equipment shall be with .50m of suitable flexible conduit.

9.99.3. MOTOR STARTERS

Every electric motor having a rating exceeding a rating of 0.37 KW but below 2.2 KW shall be provided with control apparatus incorporating a suitable starting device affording protection against excess current. Electric motors having a rating exceeding 2.2 KW shall be provided with starting arrangement acceptable to local authorities.

9.99.4. CONTROL PANEL

All electrical control panels shall be constructed and wired in accordance with British Standard Specifications and Local Electric Power Supply Authority's Rules and Regulations, both with regard to the design, constructions, performances and tests.

Electrical control panel shall generally serve kitchen engineering systems such as but not limited to fire protection system, ventilator wash system, refrigeration system, pressure cleaning system and shall have the following panel construction (if not furnished by manufacturer).

- i. Wall mounted, totally enclosed and front connected with all live parts concealed behind an escutcheon plate.
- ii. The enclosure fabricated from 16 gauge mild steel, rust protected and finished stoved enamel, with cast corner members and internal fixing holes.
- iii. All connecting cables to exit from wall into enclosed cabinet such as to avoid any external/visible cabling.
- iv. Doors of the hinged type and fitted with dustproof gasket and lockable chrome plate handle.
- v. The maximum depth of the enclosure shall not exceed 0.3m. The enclosure shall provide separate compartment for mounting contactors, starters and time switches where required.
- vi. All parts shall be designed to withstand without any sag, deformation or warping, the loads likely to be experienced during normal operation or maintenance or under maximum fault condition.

9.99.5. CONTROL PANEL INDICATOR LIGHTS/SWITCH BUTTONS

All control panel switch buttons for selecting the various modes of operations and indicator lights shall be flush with front surface of panel. The colour codes for indicator lights covering the full range of the standard fault conditions shall be decided in liaison with the hospital engineering department.

9.99.6. CIRCUIT BREAKERS, SWITCHES AND ISOLATORS

All devices shall have voltage ratings and frequency suitable for the supply characteristics to which they are applied and shall conform to the latest British Standard Specifications in all respect with regard to designs, constructions, performance and tests. Devices manufactured in accordance with other technical specifications will only be considered if Test Certificates issued by KEMA or other recognized testing authorities are submitted to show their full compliance with British Standard and ASTA rules.

9.99.7. SWITCHES & ISOLATORS

Switches and isolators shall be selected in accordance with the following :-

- i. They shall be of totally enclosed, metal-clad, double air break, quick-break and quick-make type and arranged to break all poles simultaneously.
- ii. They shall comply fully with BS 861 : Part 1 and Part 2 and relevant parts of BS 3078.
- iii. They shall be equipped with manual operating handles, positive 'on-off' indicators and mechanical door interlocks.
- iv. They shall be capable of sustaining load making and load breaking duties of their normal rated current.
- v. Switches where used for control purposes shall be of rotary and all insulated type complying with relevant section of BS 9563.
- vi. Switches used for motor circuits and control shall be able to sustain switching duties at lock-rotor condition.

9.99.8. CONTACTORS, STARTERS AND RELAYS

All device shall have voltage ratings and frequency suitable for the supply characteristics to which they are applied and their designs, constructions, performances and tests shall conform with the latest British Standard Specifications and Rules and Regulations of the Local Electricity Power Supply Authority.

9.99.9. CONTACTORS

Contactors shall be selected in accordance with the following :-

- i. They shall be the moulded contact base type supported by metal side brackets on steel base plates and fixed with shock absorbing bushes and captive screws inside the totally enclosed dust proof, rust protected, enamel finished pressed steel cabinets of flushed type of surface mounting type.
- ii. They shall comply fully with BS 755 Part 1, BS 764 and relevant parts of BS 9200.
- iii. They shall be of the double air-break, quick-make and quick-break type for eachpole.
- iv. They shall comprised of basic assemblies capable of being built into any combination of poles, switching arrangements and attachments for mechanical interlocks, auxiliary contacts and timing device.
- v. Their main contacts shall, for at least 100 operations and without damage or pitting, be able to interrupt current equal to six times the continuos requirements at less than 0.35 power factor at specified voltaage
- vi. Their main contacts shall, without damage of any sort, able to sustain a closing current surge equal to ten times the continuos rate requirements at specified voltage
- vii. Their main contacts shall be able to carry continuously the rated current without damage in an enclosure having an ambient temperature of 50°C.
- viii. They shall have coils vacuum impregnated and wound on moulded formers. The coils shall be capable of operating within -15% to +10% of the nominal voltage.
- ix. Where used as automatic changeover devices, they shall be of the mechanically and electrically interlocked type which excludes the possibility of paralleling two separate incoming supply source.

9.99.10. STARTERS

Starters shall be selected in accordance with the following :-

- i. They shall comprises of main contactors, auxiliary contacts, protective and control devices, switches, operating coils and wiring all assembled as an integrated unit and housed inside a totally enclosed dust proof, rust protected, enamel finished pressed steel cabinets of either flush type or surface mounting type. They shall comply fully with BS 140 and BS 587.
- ii. They shall be manually operatable by means of external mounted 'start-stop-reset' push buttons, control push buttons and toggle type isolating switches, all having positive visual indications showing the actual status of the starters.
- iii. Protective devices shall include thermal overload of bimetal type having differential movement for preventing single phasing of three-phase motors. They shall have adjustable settings with ambient temperature compensators.
- iv. Their contactors shall be of similar constructions, performances and designs as described under Clause 3.02.

9.99.11. CONTROL RELAYS

Control relays shall be selected in accordance with the following :-

- i. They shall be either A.C. operated or D.C. operated with or without latching devices and having voltage rating as shown in the Drawings.
- ii. They shall be of the moulded contact base type supported by metal brackets on steel base plates and stable from shocks or vibrations.
- iii. They shall comply fully with BS 9150 and BS 9151.
- iv. They shall be equipped with double air-break contacts of self wiping quick action type in each pole.
- v. They shall comprise of basic assemblies, capable of being built into any combination of operating contacts with 'normally close' action and with attachments.
- vi. They shall have making and breaking capacity of not less than 10 times rated current in A.C. rating and 2 times rated current in D.C. rating.
- vii. Latched control relays shall be of mechanically held-in type so that they remain lock in position.

Timers shall be of either :-

- a) Pneumatic disc type, A.C. or D.C. operated with manually operatable adjustable time setting from 0.2 second.
- b) Solid state type with hybrid integrated circuits having manually operatable time adjustment from 0.1 second to 60 second.
- c) Motor drive type with time adjustment from 1 minute to 45 minutes.

Voltage coil shall have regulation between -15% to +10% nominal rating.

All relay blocks shall be equipped with self clamping terminals for front wirings.

Where specified as time switches, they shall be of the totally enclosed, flush or surface mounting type, having removable transparent plastic cover at the front and overall metal casing at the back to house every components associated with. They shall be equipped with visual time dial, manually operatable on-off-automatic selection switch and self-wounded 24-hour spring reserved from taking over the timing when the supply source is loss. Unless otherwise specified, the programme period shall be 24 hours duration with adjustment from minimum switching interval of 15 minutes.

9.100. PAINTING AND LABELLING

SCOPE OF WORK

This section of the Specification covers the painting and labelling of the equipment and works installed under the other sections of this Specification.

The work involved includes but shall not be limited to the supply and application of paint, thinners, identification labels, etc., unless specifically excluded elsewhere in this Specification.

9.100.1. PREVIOUSLY PAINTED SURFACE

If equipment is delivered to the Site already painted but not generally in accordance with the requirements of this Specifications, the Architect may at his discretion order any of the following action :-

- i. If the paint already applied to surfaces which will not be exposed to view in the finished installation is not considered to provide suitable protection for those surfaces, it shall be completely stripped off by an approved method and the surface cleaned down for repainting as specified. If the existing paint is considered to provide suitable protection, no further painting will be required for those surfaces.
- ii. If the paint already applied to exposed surfaces is considered to be a suitable base it shall be cleaned down and one undercoat and two finishing coats as specified shall be superimposed.
- iii. If the paint already applied to exposed surfaces is not considered to be a suitable base, it shall be completely stripped off by an approved method and the surface cleaned down for complete repainting as specified.

9.100.2. SURFACE FINISHES

- i. All ferrous metal surfaces without protective finishes shall be painted except surfaces of moving parts which shall be thoroughly oiled and greased as required.
- ii. Surfaces to be chromium plated shall be first copper plated and then nickel plated.
- iii. Galvanized metal surfaces may be left unpainted unless called for or required for the purposes of colour coding and aesthetics.
- iv. Equipment and appliance delivered factory painted may, if required by the Architect for the purposes of colour coding and aesthetics, be painted as specified.
- v. Non-ferrous surfaces may be left unpainted unless called for in the Specification or required by the Architects for the purposes of colour coding and aesthetics.
- vi. All timber surfaces shall be dressed and painted
- vii. All bare surfaces requiring painting shall first be given a priming coat followed by a undercoat and two finishing coats.

9.100.3. SURFACE PREPARATION

Surfaces to be painted shall be cleaned to remove dust, dirt, oil or grease. Ferrous metal surfaces showing signs of rusting shall be wire brushed and sanded down to bright steel, cleaned and immediately given a coat of approved rust inhibitive primer. Galvanized steel surfaces shall be suitable etched to receive paint work. Timber surfaces shall be sanded to smooth finish and wiped to remove all dust. Care shall be taken to ensure that all surfaces are perfectly clean and dry before any paint is applied.

9.101. MATERIALS

All paints and other materials required shall be of the best quality of their respective kinds.

All primers, undercoats and finishing coats shall be suitable for the specific application and each shall be compatible with one another as recommended by the manufacturer.

All paints shall be epoxy based type of approved brands and shall generally be prepared by the manufacturer for use without thinning or reducing unless otherwise specified.

All materials shall conform to the relevant British Standards and shall be delivered to the Site in unopened tins or bottles or in sealed packets, in each case bearing the manufacturer's name and the nature of the contents. The containers shall not be opened until just prior to their use.

9.101.1. COLOURS

The finished colours required will be nominated by the Architect on request prior to the commencement of painting, except for clear lacquers, successive coats of paint shall be of different shades as directed by the Architect.

9.101.2. APPROVAL

Samples of finishes, colours and materials shall be submitted to the Architect and approval obtained before painting is commenced.

9.101.3. APPLICATION

i. The painting shall be carried out by experienced tradesmen in accordance with best trade practice and shall afford a first class finish within the limitations imposed by the surface nature of the items painted.

ii. Containers shall not be opened until required. Care shall be taken to ensure that the paint is thoroughly stirred before use. Thinners shall not be used except for improving the consistency.

iii. Each sub-coat shall be applied in a different shade and each coat allowed to dry before the application of the subsequent coat. Any drips or uneven finish shall be scrapped off and sanded before the application of the subsequent coat.

iv. No painting shall be carried out in unsuitable weather or in damp and unventilated environment.

v. Tarpaulins, sheets or covers shall be provided to protect floors, walls, finished work, etc., while painting is in progress.

9.101.4. PROTECTION AND MAKING GOOD

Paint shall not be mixed on the finished floors of the buildings. A separate shed or sheltered area shall be provided for mixing. The painters shall be equipped with as many drip cloths as may be necessary to fully protect all parts of the equipment buildings and other works. They shall take all the necessary or usual precautions to avert damage to their own work, including placing warning signs as required, and shall make good any damage incurred to their own or other work.. Paint spots, splashes and overruns shall be removed before they have hardened and the area shall be kept clean and tidy.

9.101.5. HEAT RESISTANT PAINTS

The paints applied to any surfaces which may become hotter than the highest temperature for which normal paints are suitable shall be heat resistant to a degree commensurate with the highest temperature they may be called upon to withstand.

9.101.6. PRIMING

All surfaces shall have one priming coat applied. Steel and iron shall be primed with a rust inhibiting primer and

galvanized surfaces shall be primed with an etching primer. A second priming coat shall be applied to all surfaces which will be covered by insulation or attached equipment and to all other surfaces where the Architect considers the first primer has proved inadequate for its purpose.

9.101.7. STEELWORK AND EQUIPMENT

One undercoat and two high gloss finishing coats shall be applied to all surfaces not covered by insulation or attached equipment. Areas of equipment which may be inaccessible after installation shall be painted before hand where possible.

9.101.8. WORK TO BE PAINTED

In the absence of more specific instructions the following principles shall be adopted as regards to work requiring painting :-

- i All surfaces requiring protective coating, e.g. ferrous and timber surfaces.
- ii. All work required by regulations to be painted for purposes of identification, e.g., fire protection piping, electrical conduits, industrial water, etc.
- iii. All work exposed to view irrespective of surface material, e.g., equipment, ductwork, pipe work, etc.

Notwithstanding the above, all pipe work shall be banded and labelled as specified elsewhere in the specification. Items of work which are difficult to paint after installation shall be prepainted. All hangers, brackets and supports must be prepainted before installation.

9.101.9. SIGN WRITING

All major items of equipment shall be identified with approved names and/or numbers of suitable size in proportion to the size of the respective items. Pipelines shall be marked with contrasting colour directional arrows adjacent connections, valves and branches and at intervals of not more than 5 metres. These arrows shall be 75mm (3") long on pipes up to 50mm (2") diameter and 150mm (6") long on pipes over 50mm (2") diameter.

9.101.10. IDENTIFICATION

a) Motor Control Identification

Mount black lamacoid nameplates on each motor controller identifying primary control function and individual position indication such as Pump No. 1, etc. Nameplates shall be cut through to white background and have bevelled edges. Mount with chromium plated acorn head screws.

b) Piping Identification and Coding

- i Apply colour coded Polyvinyl Chloride pipe bands identifying pipe contents and direction of flow.
- ii. On exposed piping apply bands on 30 foot centres of straight runs, at valve locations, at points where piping enters and leaves a partition, wall, floor or ceiling.
- iii. On concealed piping installed above non-removable ceiling construction apply bands in manner described for exposed piping.
- iv. On concealed piping installed above non-removable ceiling construction, or in pipe shafts, apply bands at valve or other devices that are made accessibly by means of access doors or panels.

- v. Apply bands at exit and entrance points to each vessel, tank or piece of equipment.
- vi. Band widths shall be 8" for pipes up to 10" diameter and 16" wide for large diameter piping. Letter heights stating service shall be pre-printed on band 3/4" high for 8" bands and 1 1/2" high for 16" bands.
- viii. For insulated pipes apply bands after insulation and painting work has been completed.
- ix. Colours shall conform to ASA Standard A13.1. Provided 24 additional bands of each type for future use by Employer's personnel.
- x. Follow manufacturer's instruction for application procedures using non-combustible materials and contact adhesives.

Submit list of all identification for review and approval six months prior to start-up of earlier system.

9.101.11. **CLEANING**

Upon completion of the installation work the CONTRACTOR shall clear all building debris from the plant rooms and to ensure that all building works required to be carried out therein are satisfactorily completed to his requirements as regards to finishes to walls and floors to provide an environment free from dirt and dust as required for the efficient operation of his equipment.

If any work is not satisfactorily completed, the CONTRACTOR shall bring same to the attention of the MCON who shall cause same to be rectified.

Before any test is carried out, the CONTRACTOR shall ensure that all equipment and installation work is cleaned and no debris is lodged in any of the moving parts.

9.101.12. **SHOP DRAWINGS**

9.101.13. **GENERAL REQUIREMENTS**

Shop drawings submitted for approval must be complete in all respects and shall be prepared by competent draughtsmen experienced in the type and nature of work being considered. The drawings shall be prepared in ink on good quality tracing paper and shall be of standard metric scale and size. The number of drawing size adopted shall be kept to the minimum and once selected the same size shall be used throughout for each class of drawings.

Each drawing shall be suitably titled and numbered and shall bear the date of issue and the date of details of all subsequent revisions.

The drawings to be submitted for approval shall be classified broadly into the following types:-

- i. Layout Drawing
- ii. Builder's Work Details including recess drawings
- iii. Services Layout for plumbing engineer
- iv. Services Layout for electrical engineer
- v. Fabrication Details, including elevations

9.101.14. **DRAWING LAYOUT**

The drawing layout shall be set out generally as the contract drawings.

The title block shall provide the following information :-

- i Title :
- ii The particular engineering services pertained to (e.g. Ventilation and Air Conditioning, Electrical Services, Piped Services, Fire Protection Services).
- iii The subject of the drawing.
- iv The date of issue.
- v The drawing number.
- vi The scale or scales used.

A revision column shall also be provided to note the date and details of each revision. The conventions and symbols to be adopted in the drawings shall be as the contract drawings. Any departure shall have the prior approval of the Arc.

9.101.15. **ARRANGEMENT & SETTING OUT**

The arrangement of the various equipment and associated services shall follow closely that set out in the contract drawings except where modification is required to suit the specific materials and equipment to be provided, to fit the latest available information on the building construction details, to meet the requirements of other services and equipment or to incorporate improvements proposed by the CONTRACTOR, and such other modifications as approved by the Arc.

The setting out and design details shall be in accordance with best engineering and trade practice. In particular the arrangement of the various equipment and systems shall be such as to allow for proper operations and ease in servicing and maintenance of the installation. All controls and operating devices shall be readily accessible; and warning devices clearly visible. Where unavoidable access platforms shall be provided.

All services run (pipes, conduits, ducting, etc.) shall be fixed clear of each other and shall be arranged so far as is reasonably possible to afford easy access for maintenance and repair. No service run shall be installed or fixed behind other services run and shall be readily replaceable along its full length.

The following information and details shall be provided where appropriate :-

- i All services runs shall be located with reference to the nearest grid line and dimensions indicated on the drawings.
- ii The bottom elevation of each of the services runs shall be indicated on the drawings and any change in elevation clearly noted.
- iii The dimensions of all services runs must be given and where appropriate the gradient and direction of flow given.
- iv Positions of all hangers and supports shall be indicated with each particular type clearly differentiated and reference to detailed fabrication drawings.
- v The load imposed on the structure by each of the hangers and supports shall be given and the direction and magnitude of all dynamic thrusts noted.
- vi All structural penetrations must be indicated (the details of such penetrations shall be

given in the builder's work drawings) and embedment clearly noted.

- vii. The position of all joints, fittings, connections and tee-off shall be indicated. Any special provisions such as expansion joints, test points, etc. shall be clearly noted and positions dimensioned.
- viii. All access openings required for operation and maintenance of the system shall be indicated and dimensioned.
- ix. All applied finishes, such as insulation, sheathing, painting, fire rated enclosures, furring, etc., shall be noted.
- x. As many sections and elevations as are necessary to clarify the plan layouts shall be given.
- xi. Schematic flow diagrams and single line diagrams shall be provided to amplify the plan layouts where details shown are insufficient to give a clear picture of the systems proposed.
- xii. A legend shall be given to explain all symbols used in the drawings

9.101.16. **SERVICES LAYOUT**

Drawings described must be detailed to a scale of not less than 1:50.

The physical size and shape of all plant and equipment to be installed in each room or location shall be shown in full.

All installation and connection details must be shown and noted in the drawings. Fixing to and embedment in structural members must be noted and the magnitude of each load point given. Where impact or dynamic load is expected the magnitude and direction of such loads shall be given.

All access provisions (such as trenches, ladders, platforms, etc.) for installation, operation and maintenance of the equipment must be fully detailed.

As many sections and elevations as are necessary to clarify the plan layouts shall be given.

For the purposes of this clause all water storage tanks, sump pump pits, ejector pits and grease traps, etc. shall be considered and treated as an item of plant in the provision of details and information for approval.

In support of the detail shown in these drawings the CONTRACTOR must submit at the same time manufacturer's dimension sheets, installation and operation details, together with details of all ancillary equipment, control and wiring diagrams, schematic flow diagrams, etc. as may be appropriate for the detailed evaluation of the submission.

9.101.17. **BUILDER'S WORK DETAILS**

A set of drawings showing MCON's work in connection with the services shall be submitted together with the installation layout drawings. These drawings shall be used by the Employer for co-ordinating with his structural shop drawings.

These drawings shall be prepared on a structural background to a scale of 1:50 and shall show to scale where appropriate the following :-

- i. Equipment foundations and plinths, holding down bolts and fixing details.
- ii. Structural openings and core holes through walls, floors and beams (size and configuration must be given).
- iii. Cast in sleeves and frames (size and type must be given and adequately referenced to

- iv. fabrication details).
- iv. Embedment in structural concrete (anchor inserts, pipe sections, fixing bolts, drain outlets, etc.).
- v. Trenches and cast-in conduit runs and pipework.
- vi. Structural enclosures.

The details shown must be fully dimensioned and located with reference to the structural gridline. Where appropriate elevation levels must be given.

9.101.18. SERVICES & MAINTENANCE

9.101.19. SCOPE OF WORK

The work to be performed by the CONTRACTOR shall include the supply and delivery of all materials, labour and incidentals for the service and maintenance of the Food Services Equipment and shall include but not be limited to the following:-

- i. Free service and maintenance during the Defects Liability Period.
- ii. Two (2) years regular services and maintenance commencing from the date of expiry of the Defects Liability Period (at the option of the Employer).
- iv. Supply and replace all defective parts and equipment as necessary.
 - a. During the Defects Liability Period - free of charge.
 - b. After the Defect Liability Period - at normal market rate.

9.101.20. ROUTINE MAINTENANCE

The CONTRACTOR shall make monthly inspection of the equipment and shall perform normal services which shall include but not be limited to the following :-

- i. Inspect all steam and condensate pipework and,
 - a. Check all seals and gaskets for leaks and rectify as necessary.
 - b. Check all valves, traps and strainers, etc. for correct function and rectify as necessary.
- ii. Inspect all gas pipework and,
 - a. Check all seals, gaskets and connections for leaks and rectify as necessary.
 - b. Check all valves, regulators, etc. for function and rectify as necessary.
- iii. Inspect and service all kitchen equipment and ventilators in accordance with the manufacturer's recommendations with special attention to the lubrication of bearings and gearboxes, adjustment of V-belt drives and electric motor brush gear where installed.
- iv. Cooling Water System.
 - a. Clean all pump suction strainers.
 - b. Check pumps for bearing noise, bearing lubrication and rectify as necessary.
 - c. Check pump mechanical seal/packing for leakage and rectify as necessary.
 - d. Check pump drive coupling and replace as necessary.
 - e. Check pump leakage drain lines.
 - f. Check and operate valves to ensure they operate smoothly without binding.
 - g. Check and tighten loose pipe supports.

9.101.21. **Refrigeration System.**

- a. Check all seals and gaskets for leaks and rectify as necessary.
- b. Check all oil levels and top up as necessary.
- c. Check all refrigerant levels and charge up as necessary.
- d. Check all condenser pressures and clean condensers as necessary.
- e. Check all suction pressures and rectify as necessary.
- f. Check all belt drives for tension and adjust as necessary.
- g. Check all controls and adjust as necessary.
- h. Check all safety devices and ensure they operate as designed.
- i. Tighten all bolts and nuts, and loose connections.

9.101.22. **Electrical**

- a. Check for tightness of electrical connections, and tighten as necessary.
- b. Clean motors and housings.
- c. Check motor bearings and replace as necessary.
- d. Check overload elements and adjust as necessary.
- e. Check Switchboard, Control Panel and Local Control Panels, Test Automatic and Manual Operations, and check all indication lights.

9.101.23. **REPAIRS**

The Kitchen Equipment Contractor shall, at the request of the Employer, send a competent person during the CONTRACTOR's normal working hours immediately. He is available, at times other than those of the inspection and servicing herein before described, for the purpose of adjusting or rectifying any fault. The Employer shall notify the CONTRACTOR of any fault in the proper operation of the plant or equipment as early as possible after occurrence thereof. No extra payment shall be made for additional visits or servicing required under this clause.

9.101.24. **EMERGENCY SERVICE AND REPAIRS**

In addition to the regular inspection and servicing, a 24-hour emergency service shall be provided. A competent person must be made available at all times to attend to any emergency required.

9.101.25. **COMPETENT PERSONS**

The CONTRACTOR shall ensure that all servicing, maintenance and repairs carried out under this Contract are performed by competent persons and shall, if so required, inform the Employer of the name of such person or persons.

The CONTRACTOR shall ensure that the provisions of the regulations or of any law relating to the installation for the time in force are complied with so far as they apply to the work to be executed under this Contract.

9.101.26. **REPORTS**

A log book shall be provided by the Contractor in the Plant Supervisor's Office to record the date, time and details of each maintenance.

The record shall give a listing of details of all services, maintenance, repairs, parts replace, etc., and the name and signature of the personnel carrying out the work.

9.101.27. **GUARANTEE & WARRANTY**

During the Defects Liability or Warranty Period, all equipment and works installed by the performing satisfactorily shall be replaced without charges. The Warranty Period shall commence from the date of project handover. All warranties on spare parts shall be one (1) year from commencement of warranties, manufacturers' defects two (2) years, and all electronic parts one and a half (1.5) years. All warranties shall be prepared and submitted to the Owner for signing when the handover is certified. During the

warranty period, CONTRACTOR shall be available for on-call warranty servicing seven (7) days per week, twenty-four (24) hours per day and shall respond to such calls and commence remedial action within a twenty-four (24) hour period for city locations and a forty-eight (48) hour period for remote locations. All necessary tools, spare parts and manuals for such servicing shall reside with CONTRACTOR. If any part breaks more than one time during the warranty period, it shall be fully replaced with a new part. CONTRACTOR shall exercise all reasonable efforts and due diligence to carry out repairs and minimize the down-time or non-availability. No repair shall take more than one (1) day from commencement of remedial action, unless prior notice is given and accepted by the Owner. If CONTRACTOR fails to complete the repairs to the satisfaction of the Owner within the said period, CONTRACTOR shall pay the Owner liquidated damages of the rate of two tenth percent (0.2%) of the Contract Price of the equipment for each day or part of a day the equipment is not available as a consequence of such delay in repair.

9.101.28. **SPARES**

CONTRACTOR shall submit spare parts list and manufacturers' regional hotlines and area contacts for all equipment specified here-in after the project has been awarded. Equipment manufacturer's recommendations shall be followed by the CONTRACTOR in the preparation of recommended spare parts list. CONTRACTOR shall note down long lead items and the availability of shelf replacement parts.

All spare parts furnished by CONTRACTOR shall be wrapped and packaged to preserve original as new condition under normal conditions of storage. The same parts shall be properly tagged by stainless steel tags and coded so that later identification as to their intended equipment usage will be facilitated. All items supplied shall be packaged separately and clearly marked as "Spare Parts" and shipped with the equipment in accordance with the instructions from Purchaser. Packing lists shall be furnished complete and in detail so that parts can be handled without uncrating, if desired.

10 Prescribed Timeline: -

S. No.	Activity	Time Limit
1	<i>Completion of Installation and Commissioning.</i>	60 days² from date of issuance of Work Order.
2	<i>Comprehensive warranty period</i>	2 years from the date of Commissioning
3	<i>CMC/AMC period (wherever applicable)</i>	7 years CMC after warranty
4	<i>Preventive maintenance visits to all installation site during Warranty/CMC or AMC period</i>	One visits every six months (2 visits in a year) for periodic/preventive maintenance and any time for attending repairs/break down calls
5	<i>Frequency of payment of CMC or AMC charges (if taken)</i>	Payments shall be on a six-month basis as per the approved rate of CMC/AMC.
6	<i>Signing of Contract.</i>	10 days from the date of issuance of Letter of Intent.
7	<i>Submission of Performance Security</i>	2% of the total contract value before signing the contract Balance 3% within 10 days of issue of Work Order for the respective sites/locations not adjustable .
8	<i>Payment Timeline</i>	<i>Payment shall be released within 30 days of receipt of Bill. Bill can be raised only after obtaining the certificate of completion from the project/Site engineer.</i>
9	<i>Maximum time to attend any Repair call</i>	<i>Within 48 hours</i>
10	<i>Uptime in a year</i>	95%

¹ To be decided by the TIE from case to case basis

² To be decided by the TIE from case to case basis

11 Eligibility Criteria: -

- The Bidder should be an entity registered under relevant laws in India. A foreign manufacturer (not registered in India) can participate only through its Indian subsidiary (100%). In case of 100% Indian subsidiary then the turnover and experience of the principal company shall be taken into consideration.
- The Bidder should have experience of successful execution of similar assignments/contract of value (cumulative total) not less than Rs 1.00 Crore of supply, installation and commissioning of “Kitchen Equipment” of any Government, PSU or Corporate Hospital/Hotel during last three financial years i.e., 2019-20, 2020-2021, 2021-22. The Work Order copies in support of that in last 3 financial years to be furnished (As per Format T9). Client satisfactory certificate shall also need to be submitted along with the work order copies. Authorized Dealer or Distributor can participate (for that Bidder need to submit the authorization from OEM for major items). Bidders need to fulfill all the eligibility criteria.
- The Bidder should have an average annual turnover of Rs. 2.00 Crores or more in the last three (3) financial years (i.e., 2019-20 or 2020-21, 2021-22) duly certified by the Chartered Accountant as per the format at Format T8.
- The Bidder, at the time of bid submission, should have not been blacklisted / debarred / banned from participating in any tender by any State or Central Government Organization/ Public Sector Undertaking / UN Agencies TIE due to (a) Service or quality failure of the

equipment(s) supplied (b) Submission of fake or forged documents (c) Submission of incorrect information / Suppression of vital information & facts/ misrepresentation of quality certificates (d) Non -performance or non-supply can't participate in the tender during the period of blacklisting / debarment / Banned.

- v. The Bidder or any of its directors/partners/key officials should not have been convicted by a competent court of law for non-performance, fraud & misrepresentation or any criminal activity within a period of last 3 years from the date of submission of bid.

Note:

•Where the bidder is not the manufacturer of the equipment installed, it has to produce the Manufacturer's Authorization Form for the respective item(s) as per Format-T6.

12 GENERAL CONDITIONS OF CONTRAC: -

12.1. Assignment, Sub-letting and Modification of Contract.

12.2. Assignment: -The Successful bidder shall not assign, either in whole or in part, its contractual duties, responsibilities, and obligations to perform the contract, except with the Tender Inviting Entity's (i.e., ACCF's) prior written permission.

12.3. Subcontracts: The Successful bidder shall not subcontract the execution of the contract. Such action, if done without the knowledge of the Tender Inviting Entity prior to the entering of the contract, shall not relieve the successful bidder from any of its liability or obligation under the terms and conditions of the contract.

12.4. Modification of contract: If necessary, the Tender Inviting Entity may, by a written order given to the successful bidder at any time during the currency of the contract, amend the contract by making alterations and modifications (not amounting to material change i.e. without affecting ranking of the bidder) within the general scope of contract, in any, one or more of the followings:

- a. Specifications, drawings, designs, etc., of the "Kitchen Equipment" to be commissioned at respective health facility/hospital,
- b. Mode of Demonstration/Quality Inspection
- c. Incidental services to be provided by the successful bidder
- d. Mode of Installation
- e. Any other term(s) of the contract, as felt necessary by the Tender Inviting Entity depending on the merits of the case.

12.5. In the event of any such modification/alteration that causes increase or decrease in the cost of goods and services to be supplied, or in the time required by the successful bidder to perform any obligation under the contract, an equitable adjustment may be made in the contract price and/or contract delivery schedule, as the case may be, and the contract amended accordingly.

12.6. If the successful bidder doesn't agree to such adjustment/amendment as proposed by ACCF, then it shall convey its views in writing within ten days from the date of such communication.

12.7. Supply, Installation & Commissioning

a. The contractor shall visit the installation locations, wherever necessary, and recommend pre-installation requirements at each location. The details shall be consolidated and submitted to ACCF for further actions. If the Contractor fails to communicate of such requirement in advance and cannot complete the installation and Commissioning within the stipulate period, purchaser shall deduct Liquidated Damage (LD) charges as per the bid conditions.

b. The Contractor will arrange transportation of the ordered goods as per its own procedure and pay necessary insurance against loss or damage incidental to manufacture or acquisition, transportation,

storage and delivery and pay all necessary charges incidental till it is installed in the desired location. It shall be ensured that the equipment/materials arrive at the destination(s) in good condition within the timeline as mentioned and as per the other terms and condition of the contract.

c. If at any time during the currency of the contract, the successful bidder encounters conditions hindering timely execution of the work and performance of services, the successful bidder shall inform the purchaser in writing within a week about the same and its likely duration and make a request to ACCF for extension of the execution schedule accordingly. On receiving the successful bidder's communication, ACCF shall examine the situation as soon as possible and, at its discretion, may agree to extend the timeline, with or without liquidated damages for completion of successful bidder's contractual obligations by issuing an amendment to the contract.

d. The Contractor is required to complete the installation and Commissioning of the "Kitchen Equipment" (or System) successfully at the site within time specified under Clause 4.3. from the date of issue of the "Work Order" and demonstrate individually the specification/ features as well as operation / performance of the system to the satisfaction of the user institution (in-charge/Engineer) and obtain an individual "Installation Certificate" (as per format in Annexure) for each equipment and warranty card (as per format in Annexure) duly signed and with proper stamp of the institution concerned.

e. The installation report and two-month performance reports shall be submitted separately, in a single sheet printed back-to-back and shall be submitted individually for each system installed.

f. The site for installation of the equipment shall be provided by ACCF as per the required specification and environmental conditions before the installation of System. The electrical power supply point at the installation location will be provided by ACCF as required for installation and commissioning of the Kitchen equipment System.

g. All incidental work including civil, electrical or mechanical work required for installation of the System will be the responsibility of the Contractor. The contract price as offered in the price bid and agreed shall be all inclusive. No separate payment shall be made other than the contracted price.

h. Detailed site plan and System layout plan including civil/electrical work or other related works shall be prepared by the supplier.

i. Earthling arrangements for all the equipment shall be completed as per standard practice.

12.8. Payment: -

- a) No advance payments towards cost of item supplied and installed will be made to the Contractor.
- b) 70% of the cost of the equipment against supply of all the equipment (excluding CMC Cost, if any) + 100% tax shall be paid to the Contractor on supply of equipment at site.
- c) The balance 30% of the payment of equipment will be made after receipt of certificate on working status of the equipment from the consignee after 4 weeks of installation and commissioning of the System.
- d) The original invoice submitted shall be in the name of ACCF and the name of the consignee/Hospital shall also be mentioned in it. Invoicing, performance security deposit and consignee details shall be mentioned in the Work Order.
- e) The payment of CMC (if taken) will be made once in six months basis after satisfactory completion of said period.
- f) Where there is a statutory requirement for tax deduction at source, such deduction towards income tax and other taxes as applicable will be made from the bills payable to the Contractor at rates as notified from time to time.
- g)

12.9. Post-installation Service Conditions: -

- a. ACCF attaches paramount importance to the post installation service of the system installed to ensure smooth operation afterwards. The successful bidder is required to undertake preventive maintenance and attend all repairs, if any, that may arise during the warranty period free of cost and thereafter for additional period if mentioned in the Tender as a requirement, for which the rates of Comprehensive Annual Maintenance Contract, in simple terms (CMC-including all essential spares needed for the satisfactory performance of the equipment) shall be finalized at the time of bid finalization itself. The rate offered for CMC/AMC charges will be considered for evaluation of prices and deciding on the successful bidder, for the item where it has been specifically mentioned to consider CMC/AMC charges for price evaluation.
- b. The post-installation service terms and conditions will be strictly enforced and those bidders who are willing to support the Purchaser in its endeavor to provide trouble free operation/performance of the system for the prescribed period need only participate in the bid.
- c. Post-installation service shall be performed during the warranty period and also during the Comprehensive Maintenance Period (CMC) (Where CMC is mentioned as a requirement in the tender).
- d. Failure to provide satisfactory post-installation services during or after the warranty period and CMC/AMC will lead to blacklisting/debarring of the bidders, but after issuing due notice and provide opportunity for being heard.
- e. The supplier is required to provide Software up gradation from time to time, during the currency of the warranty period at free of cost to ACCF.
- f. Further, any bugs/shortcomings detected by the user as well as the supplier himself shall be rectified at free of cost to ACCF beyond warranty period.

12.10. Warranty Terms: -

- a. The successful bidder (Contractor) has to warrant that the Goods supplied/ material used under this Contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.
- b. The Contractor further have to warrant that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Tender Inviting Entity's specifications) or from any act or omission of the successful bidder, that may develop under normal use of the supplied goods.
- c. All the equipment including the accessories supplied as per the technical specification should carry comprehensive warranty for a period mentioned in the first instance. During this period, the Contractor shall replace all defective parts and attend to all repairs/break downs and undertake stipulated number of preventive maintenance visits to every user installation site. The cost of spare parts for all replacements has to be borne by the Contractor during the period of comprehensive warranty.
- d. On expiration of the comprehensive warranty period, the Contractor shall be willing to provide post warranty maintenance support for an additional period as prescribed in the RFP.
- e. The prospective bidder shall submit an undertaking in the Format T6 & T7 from the Original Equipment Manufacturers (OEM) that they are willing to provide spare parts for the period of warranty as mentioned and also during the additional CMC/AMC period, if awarded. The OEM shall also assure continuity of service to their product, in the event the authorised bidder couldn't provide service during the warranty / AMC period.
- f. **Site Visits:** The successful bidder shall visit each site as part of preventive maintenance as per the frequency mentioned during the warranty period. The bidder shall attend any number of break down/ repair calls as and when informed by ACCF.
- g. During every visit, a copy of the service report/break down call report, duly signed by the custodian of the equipment/head of the health care institution and stamped shall be forwarded by email/fax/post to ACCF within 10 days from the due date.
- h. Upon receipt of such notice for repair/breakdown from ACCF/Hospital, the successful bidder shall, within the period specified, and with all reasonable speed, repair or replace the defective goods or parts thereof, without cost to ACCF.
- i. If the Contractor, having been notified, fails to rectify the defect(s) within the period specified

mentioned, ACCF may proceed to take such remedial action as may be deemed necessary, at the Contractor's risk and cost and without prejudice to any other rights which the Tender Inviting Entity may have against the successful bidder under the contract.

- j. Failure to attend the repairs in time or failure to attend the stipulated preventive maintenance visit or failure to replace the defective equipment or to provide stand by equipment if the fault/downtime exceeds the stipulated period or to ensure the stipulated up-time in a year shall lead to forfeiture of the performance security and/or may lead to blacklisting/debarring of the defaulting bidder.
- k. A warranty certificate (as per format in Annexure) duly signed and with proper stamp of the institution concerned and also signed by the authorized signatory with the stamp of the successful bidder shall be submitted to the ACCF for keeping it under safe custody along with the Installation Certificate. A copy of the original warranty papers has to be given to the institution head concerned.
- l. The equipment which requires quality assurance test shall be done at free of cost immediately after installation, during the comprehensive warranty period, during the CMC / AMC period, by the demand of ACCF and also when major spares are replaced.
- m. Any mandatory approval required for installation shall be obtained by the Contractor in liaison with the respective authorities.
- n. The bidder shall undertake on-site calibration of the equipment every year as part of the after sales service during the period of comprehensive warranty, CMC/AMC or on demand from the user institution and submit a "calibration certificate" to the head of the user institution with a copy to the Procuring Entity afterwards.
- o. The offered warranty includes visits to the user institutions at frequencies prescribed. as part of preventive maintenance, testing & calibration as per technical/ service /operation manual of the manufacturer or as per the period specified or as per the demand of the user institute or Procuring Entity.
- p. The bidder shall provide up-time warranty of complete equipment as prescribed, the uptime being calculated on 24 (hrs) X 7 (days) basis failing which the extension of Warranty period will be extended by double the downtime period.
- q. All software updates, if any required, should be provided free of cost during Warranty period.
- r. The supplier shall provide comprehensive on-site warranty (Including All Spares, Accessories and Labour) for a period of 02 years from the date of final acceptance of the complete system after successful and complete installation and commissioning with regular updation of newer technology as and when evolved.
- s. If the performance of any individual equipment or system is not satisfactory, the same shall be replaced by the supplier free of cost.
- t. If it is found that to meet the performance criteria, any extra equipment is required the same will be provided free of cost by the supplier.
- u. Any lacuna or lacunae noticed in the functioning of the installation as a result of any design feature shall be rectified by the supplier free of cost.
- v. ACCF would expect the contractor to comply with following warranty period condition for all the ACCF projects. Warranty period shall for all purposes commence when installations are officially handed over to the Client:
- w. Minimum 5 years warranty period from the date of original installation for walk-in refrigeration system.

12.11. Maintenance Contract (CMC &AMC): -

- a. The decision to enter into CMC or AMC will be determined on the basis of cost and complexity of the equipment by the Tender Inviting or Ordering Entity or User Institution, at its discretion, prior to the expiration of warranty period.
- b. The Comprehensive Maintenance Contract (CMC) is otherwise an extended warranty. All the terms and conditions agreed by the successful bidder for executing the comprehensive warranty of the equipment shall be extended during the period of CMC, only difference being the payment of CMC

charges is absent during the period of comprehensive warranty.

c. During Annual Maintenance Contract period, the cost of spares will be borne by the Purchaser. During the period of AMC, other terms and conditions will remain the same as in the case of Comprehensive Warranty / CMC, except in respect of the cost of spares. In short, the AMC is a CMC with provisions for payment of cost of spare parts during the currency of the contract by the Purchaser.

d. The cost of CMC and AMC shall be as follows unless asked for quote:

e. - AMC will be 1% and CMC would be 3% of the Work Order/ Purchase Order Value (excluding GST). Thereafter, 3% increase every year over previous year value. Applicable GST shall be paid extra against valid GST Invoice.

f. Failure/ refusal on the part of the Contractor supplying / installing the equipment to enter into CMC/ AMC with the Purchaser, at the end of the Comprehensive Warranty Period, if the Purchaser, as the case may be, desires so, shall lead to forfeiture of performance security and may also result in the blacklisting/debarring of the bidder.

g. The rates indicated by the Contractor (winning Bidder) for the CMC and AMC in price bid form (if asked for) and such rates are binding on him after the expiration of the warranty period. The yearly rates for CMC/AMC shall remain the one and the same as quoted in the price bid form for the extended years.

h. Cost of CMC (excluding GST, if any) will be considered for the Evaluation purpose of the equipment, wherever it is mentioned in the price bid or elsewhere in the bid document.

i. The payment of the agreed CMC/AMC charges will be made as per frequency for payment after satisfactory completion of said period, on receipt of service report/ break down report from the head of all user institutions.

12.12. Training: -

a. The Contractor have to impart on-site training to the ACCF staff on the operation and preventive maintenance of the equipment at the time of installation and anytime during warranty period if demanded by the User Institution.

b. The training details shall be recorded in the installation certificate, wherever required for enabling the payment.

12.13. Imported Equipment: -

a. ACCF shall no way involve in the import of the equipment from foreign countries, if such equipment is manufactured outside the country. It shall be the sole responsibility of the bidder to import the equipment offered by paying the requisite consideration in foreign currency and following the stipulations issued by the Government of India, from time to time, in the import of equipment, especially when the import is from hostile nations.

b. The Contractor (Contracted Bidder) shall inform any advantages in prices to the Tender Inviting Entity because of reductions/exemptions in customs duty in case of imported equipment at the time of pre-bid meeting and the bid document shall be modified by amendment to that extent.

c. ACCF will not interfere in any manner with the import process and the successful bidder shall be solely responsible for supply and installation of any equipment at the time and locations stipulated/agreed to in the bids.

d. ACCF shall prefers to deal with the importers or Indian subsidiaries of the foreign original equipment manufacturer having a place of business in India.

e. The payment will be made in Indian Rupees to the Contractor and under no circumstance; the request for opening of letter of credit or payment in foreign currency will be entertained.

f. The Contractor shall indemnify ACCF from all liabilities/damages, if any, that may arise out of the conduct of the Contractor in violation of foreign exchange regulations.

g. However, the Contractor shall disclose the country of origin and shall obtain an undertaking from such OEM to provide spares or service support for the period of contract. Failure on the part of the OEM to perform the agreed terms of the undertaking in providing the spares and after sales support will be construed as violation of the contractual obligations by the successful bidder terming the relation as that of a principal and agent under laws of the country. Such violations may eventually lead to forfeiture of performance security and also lead towards blacklisting/debarring the successful bidder.

12.14. Intellectual Property Rights: -

- a. The Contractor shall, at all times, indemnify and keep indemnified ACCF, free of cost, against all claims which may arise in respect of goods & services to be provided by the Contractor under the contract for infringement of any intellectual property rights or any other right protected by patent, registration of designs or trademarks.
- b. In the event of any such claim in respect of alleged breach of patent, registered designs, trademarks etc. being made against the Tender Inviting Entity, the TIE shall notify the Contractor of the same and the Contractor shall, at his own expenses take care of the same for settlement without any liability to the Purchaser(s).
- c. The Contractor/ its Indian Agent/CMC Provider shall at all times, indemnify and keep indemnified ACCF against all claims/ damages etc. for any infringement of any Intellectual Property Rights (IPR) while providing its services under Comprehensive Warranty/ CMC/AMC.

12.15. Corrupt or Fraudulent Practices: -

- i. It is required by all concerned namely the Purchasing Entity/ Bidders, etc., to observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Tender Inviting Entity defines, for the purposes of this provision, the terms set forth below as follows:
- ii. "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a official in the procurement process or in contract execution; and
- iii. "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the Tender Inviting Entity of the benefits of free and open competition;
- iv. ACCF will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question; will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract by the Tender Inviting Entity if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing the contract.
- v. No bidder shall contact the Tender Inviting Entity or any of its officers or any officers of the government on any matter relating to its bid, other than communications for clarifications and requirements under this bid in writing, with an intention to influence the members of various committees or officials of Tender Inviting Entity. Any such effort by a bidder to influence the Tender Inviting Entity and its evaluation committee, bid comparison or contract award decisions may result in rejection of the bid.

12.16. Force Majeure: -

- a. For purposes of this clause, Force Majeure means an event beyond the control of the successful bidder and not involving the Contractor's fault or negligence and which is not foreseeable and not brought about at the instance of , the party claiming to be affected by such event and which has caused the non-performance or delay in performance. Such events may include, but are not restricted to, acts of the Tender Inviting Entity either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes excluding by its employees, lockouts excluding by its management, and freight embargoes.
- b. If a Force Majeure situation arises, the Contractor shall promptly notify ACCF in writing of such conditions and the cause thereof within twenty one days of occurrence of such event. Unless otherwise directed by ACCF in writing, the Contractor shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
- c. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate

the contract without any financial repercussion on either side.

d. In case due to a Force Majeure event the ACCF is unable to fulfill its contractual commitment and responsibility, ACCF will notify the successful bidder accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.

12.17. Resolution of Disputes: -

- a. If dispute or difference of any kind shall arise between the Tender Inviting Entity and the Contractor in connection with or relating to the contract, the parties shall make every effort to resolve the same amicably by mutual consultations.
- b. If the parties fail to resolve their dispute or difference by such mutual consultation within twenty-one days of its occurrence, then, unless otherwise provided in the bid document, either the Tender Inviting Entity or the Contractor may give notice to the other party of its intention to commence arbitration, as provided the applicable arbitration procedure will be as per the Arbitration and Conciliation Act, 1996 of India.
- c. Venue of Arbitration: The venue of arbitration shall be the place from where the contract has been issued, i.e., Guwahati, Assam.

12.18. Applicable Law & Jurisdiction of Courts: -

- a. The contract shall be governed by and interpreted in accordance with the laws of India for the time being in force.
- b. All disputes arising out of this bid will be subject to the jurisdiction of courts of law in Guwahati / High Court of Assam.

12.19. General/Miscellaneous Clauses: -

- a. Nothing contained in this Contract shall be constructed as establishing or creating between the parties, i.e., the Contractor/its Indian Agent/CMC provider on the one side and ACCF on the other side, a relationship of master and servant or principal and agent.
- b. Any failure on the part of any Party to exercise right or power under this Contract shall not operate as waiver thereof.
- c. The Contractor shall notify the ACCF of any material change would impact on performance of its obligations under this Contract.
- d. Each member/constituent of the Contractor, in case of default shall be jointly and severally liable to and responsible for all obligations towards the ACCF for performance of contract/ services including that of its Associates/ Sub Contractors under the Contract.
- e. The Contractor shall, at all times, indemnify and keep indemnified the ACCF against any claims in respect of any damages or compensation payable in consequences of any accident or injury sustained or suffered by its employees or agents or by any other third party resulting from or by any action, omission or operation conducted by or on behalf of the successful bidder/its associate/affiliate etc.
- f. All claims regarding indemnity shall survive the termination or expiry of the contract.
- g. All incidental work including civil, electrical or mechanical work required for installation of the System will be the responsibility of the Contractor.
- h. Detailed site plan and System layout plan including civil/electrical work or other related works shall be prepared by the supplier.

12.20. Penalties for Non-Performance: -

- a. The penalties to be imposed, at any stage, under this bid are;
 - i. imposition of liquidated damages,
 - ii. forfeiture of EMD/performance security
 - iii. termination of the contract
 - iv. blacklisting /debaring of the bidder
- b. Failure to produce the requisite certificates after claiming to possess such certificates or concealment or misrepresentation of facts will not only lead to rejection of bids in the first round itself and/or may lead to forfeiture of EMD or performance security as well as result in

blacklisting/debarring of the bidder.

c. The penalties to be imposed on the Contractor, at any stage, will be decided on the basis of the violations of number of bid conditions specifically mentioned in the bid document as that leading to forfeiture or EMD/ Performance Security or leading to black-listing/ debarring.

d. Any unexcused delay by the Contractor in maintaining its contractual obligations towards delivery of goods and performance of services shall render the Contractor is liable to any or all of the following sanctions:

- i. **Liquidated Damages:-** If the contractor fails to install the system within the time frame(s) prescribed in the contract, ACCF shall, without prejudice to other rights and remedies available to it under the contract, deduct from the Work Order price as liquidated damages, a sum equivalent to 1% of the value of the Work Order to be supplied and (or) installed, per each week of delay or part thereof until actual commissioning or performance subject to a maximum of 5%. ACCF reserves the right to allow an additional penal period of 3 (three) weeks beyond the normal penal period (5 weeks) on the written request of the Contractor with the condition that liquidated damage @ 2% on the delayed order value will be charged for each week or part thereof during the extended penal period.
- ii. Penal period shall start after the stipulated timeline for commissioning (as the case may be). No goods shall be received from the Contractor after expiry of the initial penal period of 5 (five) weeks and the Work Order shall stand cancelled unless the Contractor is allowed an additional penal period (as decided by ACCF) by ACCF.
- iii. Once the timeline for installation and commissioning of Kitchen equipment with LD is exceeded, ACCF may consider termination of the contract. During the above- mentioned delayed period of performance, the conditions incorporated shall also apply and ACCF shall seek alternate measures at the risk and cost of the successful bidders.
- iv. The decision to impose penalties and finally to blacklist the defaulting firm will be final and shall be binding on all bidders participating in this bid.

12.21. Termination of Contract: -

a. **Termination for default:** The TIE, without prejudice to any other contractual rights and remedies available to it may, by written notice of default sent to the successful bidder, terminate the contract in whole or in part, if the successful bidder fails to to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the TIE.

b. In the event of the TIE terminates the contract due to default in the part of the Contractor, in whole or in part, it may procure goods and/or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit and the Contractor shall be liable to the TIE for the extra expenditure, if any, incurred by ACCF for arranging such procurement.

c. Unless otherwise instructed by ACCF, the Contractor shall continue to perform the contract to the extent not terminated.

d. **Termination for insolvency:** If the Contractor becomes bankrupt or otherwise insolvent, the Tender Inviting Entity reserves the right to terminate the contract at any time, by serving 30 days written notice to the Contractor without any compensation, whatsoever, to the Contractor, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the TIE.

e. **Termination for convenience:** - The Tender Inviting Entity reserves the right to terminate the contract, in whole or in part for its convenience, by serving 30 days written notice on the Contractor at any time during the currency of the contract. The notice shall specify that the termination is for the convenience of the TIE. The notice shall also indicate inter alia, the extent to which the Contractor's performance under the contract is terminated, and the date with effect from which such termination will become effective.

12.22. Price Firmness: -

- a. Subject to the condition stipulated above, the prices shall remain firm (unchanged) throughout the

- contract period and on no account any increase in price shall be entertained till completion of the rate contract period.
- b. During the currency of the contract, if the price of the item is reduced due to any reason including any Law or Act of the Central/State Government, the Contractor/rate contract holder shall be statutorily bound to intimate the reduced rates immediately to ACCF and shall charge the reduced rates. ACCF is empowered to unilaterally effect such reduction as is necessary in rates, in case the Contractor fails to notify or fail to agree to such reduction of rates.
 - c. In case of any enhancement of Taxes and/ or duties or levy of fresh Taxes/ duties due to statutory act of the Govt., after date of submission of the tenders and during the contractual delivery period, additional or fresh levies so imposed will be allowed to be claimed as extra without any change in the price structure approved under the tender. For this purpose, the Contractor shall produce a certificate from the authority concerned certifying that the item supplied falls under particular tariff resulting in additional/ fresh levies for the supplied item.
 - d. However, the same shall not be borne by ACCF in case such levies become applicable after expiry of the contractual delivery period stipulated in the contract.
 - e. Further, in case the bidder has been enjoying duty/tax exemption on any criteria like turnover etc. and at a later date, during currency of the contract, even if duty/tax becomes chargeable on goods manufactured, the same shall be to the Contractor's account and shall not be borne by ACCF.

12.23. Fall Clause: -

If the rate contract holder reduces its price or sells or even offers to sell the rate contracted goods or services following conditions of sale similar to those of the rate contract, at a price lower than the rate contract price, to any person or organization during the currency of the rate contract, the rate contract price will be automatically reduced with effect from that date for all the subsequent supplies under the rate contract and the rate contract amended accordingly.

FORMATS FOR SUBMISSION OF BID (TECHNICAL BID)

FORMAT – T 1: CHECK LIST

CHECK LIST

(To be submitted in *Part I -Technical Bid*)

The bid documents have to be arranged sequentially as mentioned herein for ease of scrutiny.

The bidder has to **upload the documents** as mentioned in Checklist (in **PDF format**)online, on or before the due date & time of bid submission.

Name of The

Bidder:.....
.....

S. No.	Item	Whether included Yes / No	Page No.
1	Format – T1 (Check List)		
2	Tender Processing Fee, If paid vide DD/BC		
3	Format – T2 (Details of Item quoted)		
4	Format – T3 (Details of EMD submitted)		
5	Format – T4 (Details of Bidder)		
6	Format – T5 (Declaration Form)		
7	Format – T6 (Manufacturer’s Form – in case the bidder is the OEM)		
8	Format – T7 (Manufacturer’s authorization Form –in case the bidder is not the OEM)		
9	Format – T8 (Annual Turnover Statement by Chartered Accountant)		
10	Format–T9 (Performance Statement during last three financial years immediately preceeding to the date of submission of bid (i.e. 2019-20, 2020-21 & 2021-22)		
11	Copies of Work Orders & end user certificates in support of the information furnished in Format T-9		
12	Format – T10 (Statement of deviation – Technical Specification)		
13	Format – T11 (Para-wise compliance to Technical Specification)		
14	Copy of the Leaflets / Technical Brochures / Product Data Sheets of the Model offered highlighting features in support of the information provided in Format – T11		
15	Copy of Quality Certificates (valid ISI / BIS / CE / US FDA/ IEC, etc. & ISO) of the product/organization (As per Section VII- Technical Specification).		
16	Certificate of Incorporation Registration Certificate /Deed of Partnership.		

S. No.	Item	Whether included Yes / No	Page No.
17	Copy of the .GST registration certificate		
18	Copy of PAN (Income Tax)		
19	In case the bidder is a 100% subsidiary of the Original manufacturer then documentary evidence.		
20	Undertaking/ Declaration against OM F.No. 6/18/2018-PPD dated 23rd July 2020		

Important Note

- Mentioning of Page Nos. in the relevant column as mentioned above **is mandatory** for ease of scrutiny.
- No price information (i.e., Scanned copy of the price format etc.)** to be uploaded in Technical Bid.
- After preparation of the all the documents as per checklist, the bidders have to put the page nos. on each page and put the signature of the authorized signatory & seal. Then each page has to be scanned and the scanned document to be uploaded in the e-tender portal before the scheduled date & time.
- The **BOQ** file (in Excel) and other price format (in PDF) are to be **uploaded** in the **price bid**.

All the documents to be furnished in the checklist have to be page numbered. All the formats (T1-T11) are to be filled up mandatorily.

Format - T2: Details of the Item Quoted

(To be submitted in *Part I -Technical Bid*)

DETAILS OF THE ITEM QUOTED

Sl. No.	Name of the Item(s)/ Component(s)/ Materials	Name of Manufacturer	Country of Origin	Make	Name of the Model	*Details of offered product at Page No. (s)
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						

Signature of the Bidder

Date: Place:

Official Seal:

Format-T3: Details of EMD Submitted

(To be submitted in *Part I -Technical Bid*)

DETAILS OF EMD SUBMITTED

List of locations/hospitals bided for in preferential order	Instrument No., Date & Name of	EMD Amount (Rs.)
1.....		Rs 200000/=
		(Rupees Two Lakhs Only)

Place:

Signature of Bidder:

Date:

Official Seal:

Note:

- BG format for EMD is given as Annexure-V.
- Bidder has the option to bid for one or more locations of his choice, however the EMD shall remain fixed irrespection of the number of locations/hospitals bided for.
- Bidder is required to give priority of site(s) as mentioned above.

Format - T4: Details of the Bidder
(To be submitted in Part – I Technical Bid)

DETAILS OF THE BIDDER

GENERAL INFORMATION ABOUT THE BIDDER						
1	Name of the Bidder					
	Registered address of the firm					
	State		District			
	Telephone No.		Fax			
	Email		Website			
Contact Person Details						
2	Name		Designation			
	Telephone No.		Mobile No.			
Communication Address						
3	Address					
	State		District			
	Telephone No.		Fax			
	Email		Website			
Type of the Firm (Please Select)						
4	Private Ltd.		Public Ltd.		Proprietorship	
	Partnership		Society		Others, specify	
	Registration No. & Date of Registration.					
Nature of Business (Please Select)						
5	Original Equipment Manufacturer (OEM)			Authorized Distributor/Delaer		
	100% Subsidiary of OEM			Importer		
Key personnel Details (Chairman, CEO, Directors, Managing Partners, etc.)						
6	in case of Directors, DIN Nos. are required					
	Name			Designation		
	Name			Designation		

7	Whether the Owner/Proprietor/Chairman/CEO/Director/Managing Partner has been convicted of an offence by any competent court of law within the last 3 years from the date of floating of the tender.	Yes / No
8	Registration Details: a) GST Registration b) Pl. mention whether Registered in Assam : c) Furnish the copy of the GST registration certificate	
9	Details of existing Service Centers network in North-East and Eastern India townsure maintainance obligations during Warrenty and CMC/AMC period:	
10	Bank Details of the Bidder: The bidders have to furnish the Bank Details as mentioned below for return of EMD /Payment for supply if any (if selected) a) Name of the Bank: b) Full address of the Branch concerned: c) Account no. of the bidder: d) Name (as mentioned in the bank account): e) IFS Code of the Bank:	
Signature of the bidder / Authorised signatory Place: Date: Office Seal		

Format – T5: Declaration Form

(To be submitted in Part–I Technical Bid)

DECLARATION FORM

(Self-Declaration on Letter Head with Sign and Seal)

I / Wehaving My / our office at
do

declare that I / We have carefully read all the terms and conditions of bid document issued by ACCF for the supply and installation (Name of the equipment as per Format T2) at the quoted rate and that rate will remain valid for the entire period of the rate contract of 1 years from the date of signing of the contract. I will abide with all the terms & conditions set forth in the Bid document Reference No.

..... along with the subsequent amendment, if any.

we confirm our eligibility for this tender and all items quoted as per the tender condition, specification and Governing laws of India, in case of typographical error found in submitted documents / affidavits/declarations, in this case we accept all the Terms and conditions of bid documents. That the quoted products manufactured by are of good quality and meet the applicable standards and as mentioned in the tender.

In case, I/We are de-recognized / black listed/banned/ by any State Govt. / Union Territory / Govt. of India / Govt. Organization / Govt. Health Institutions/ State Medical Corporations and or convicted by any court of law on or after the date of submission of bid, I/We undertake to inform the same to < Procurement Entity>. I/we also under take that, I/we are not involved in any unfair/fraudulent practice.

we or our concern/company/firm does not stand blacklisted/banned/debarred on any ground and has not been fo guilty, in last three years by Bid Inviting Authority or any Govt. or or by any other government department on the date of bid submission.

I/We agree that the Tender Inviting Entity can forfeit the Earnest Money Deposit and or Performance Security Deposit and blacklist me/us for a period of 3 years if, any information furnished by us proved to be false at the time of inspection / verification and not complying with the Bid terms & conditions.

I / Wedo hereby declare that I / we fulfill the eligibility criteria set out in the bid document and will supply the equipment offered by me/us as per the terms, conditions and specifications of the bid document, if selected. I / we further declare that I / we have adequate Service Centre network across India to carry out the maintenance of the equipment offered.

Signature of the bidder :

Seal

Date :

Name & Address of the Firm :

Format –T6: Manufacturers Offer Form

(To be submitted in Part– I Technical Bid)

MANUFACTURER'S OFFER FORM

(to be submitted by manufacturer in a letterhead in case the bidder is the manufacturer)

No.

Dated:

To

<Insert Name, Address and Designation of the TIE>Dear

Sir / Madam,

Bid Reference No :

Equipment Name :

1. We (name of the OEM) declare that we are the original manufacturers of the above equipment having registered office at(full address with telephone number/fax number & email ID and website), and having factories at.....
2. No company or firm or individual, other than M/s have been authorized to bid, negotiate and conclude the contract in regard to this business against this specific bid reference no.
3. We hereby declare that we are willing to provide guarantee/warranty and after sales service during the period of warranty/CMC/AMC as per the above bid and also supply spares / reagents / consumables for a period not less than 09 years. In case, our authorized bidder fails to provide after sales services as per bid conditions, we will provide the same without any extra cost to TIE.
4. We also hereby declare that we have the capacity to manufacture and supply, install and commission the quantity of the equipment bided within the stipulated time.

(Name)

For and on behalf of M/s.

(Name of manufacturers)

Date:

Place:

Seal

Note: This letter of authority should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer

Format – T7: Manufacturers Authorisation Form (for Distributor)

(To be submitted in *Part – I Technical Bid*)

MANUFACTURER'S AUTHORISATION FORM

(to be submitted by the bidder (if not the OEM) in a letter of OEM)

No.

Dated:

To

<Insert Name, Address and Designation of TIE>

Dear Sir / Madam,

Bid Reference No :

Equipment Name :

1. We (name of the OEM) are the original manufacturers of the above equipment having registered office at (full address with telephone number/fax number & email ID and website), having factories at and , do hereby authorize M/s. (Name and address of bidder) to submit bids, and subsequently negotiate and sign the contract with you against the above bid no..
2. No company or firm or individual other than M/s. are authorized to bid, negotiate and conclude the contract in regard to this business against this specific bid reference no.
3. We also hereby undertake to provide full guarantee/warranty /CMC/AMC as agreed by the bidder in the event the bidder is changed as the dealers or the bidder fails to provide satisfactory after sales and service during such period of Comprehensive warranty/CMC/AMC and to supply all the spares/reagents / consumables for 9(Nine) years.
4. We also hereby declare that we have the capacity to manufacture and supply, install and commission the quantity of the equipment bided within the stipulated time.

(Name)

for and on behalf of M/s.

(Name of manufacturers)

Date:

Place:

Seal

Note: This letter of authority should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer. In case distributor is quoting through the importer, then the manufacturer has to give authorization to importer and the importer has to give the authorization to the distributor in the above format.

Format –T8: Annual Turnover Statement

(To be submitted in *Part – I Technical Bid*)

ANNUAL TURNOVER STATEMENT

The Annual Turnover for the last three financial years of M/S.....having its registered office at and who is in the business of supply, installation and commissioning of Laundromat are given below and certified that the statement is true and correct.

Sl. No.	Financial Year	Annual Turnover (In Rupees)
1.	2019-20	
2.	2020-21	
3.	2021-22	
	Average	

(Name in Capital)Membership No.
UDIN.....

Signature of Auditor/ Chartered Accountant

Date:

Place:

Seal

N.B.

*Tender Inviting Entity reserves the right to call copies of **audited Annual Statements of Accounts** the last three years/ Annual Reports and the turnover figure should be highlighted there.*

Format –T9: Performance Statement

PERFORMANCE STATEMENT

(To be submitted in *Part – I Technical Bid*)

(For the period of last three years)

(Pl. Furnish order copies of the clients serially, the names of which are mentioned below):

Name of Bidder: _____ :
Name of Manufacturer _____ : _____
Name of the Item: _____

Sl. No.	Order placed by (Address of Client/Purchaser) (attach documentary proof) *	Order no. & Date	Item Name	Make & Model	Qty.	Value of Contract (Rs.)	Date of Completion	Have the goods been functioning satisfactorily (attach documentary proof)**
1.								
2.								
3.								
4.								
			Total Qty.					

(attach separate sheets if the space provided is not sufficient)

Signature and seal of the Bidder

* The documentary proof will be **copies of the Work Order** (during the last 3 years) indicating P.O. No. and date.

** The documentary proof will be certificate from the consignee/end user indicating P.O. No. and date.

Format – T10: Statement of Deviation (Technical Specification)

(To be submitted in *Part – I Technical Bid*)

STATEMENT OF DEVIATION – TECHNICAL SPECIFICATION

Following are the Technical deviations and variations from the purchaser's Technical Specifications.

Sl. No.	Item Name	Technical Specification As per Clause 7.1.1	Statement of Deviations / Variations if any
1.			
2.			
..			
..			
..			

(attach separate sheets if the space provided is not sufficient)

In case there is no deviation from technical specification, Pl. Mention “***No Deviation***”.

Signature of the Bidder

Name :

Date:

Place:

Format – T11: Para-wise Compliance

(To be submitted in *Part – I Technical Bid*)

PARAWISE COMPLIANCE TO TECHNICAL SPECIFICATION OF THE PRODUCT(S) OFFERED

[Furnish **para-wise compliance** in a tabular form (as per the format mentioned below), where the technical specification (para-wise) as per bid should be mentioned in the left column & bidder's compliance at the right with mention of page no. of the product catalogue / product data sheet].

Name of the Item:.....

Make:

Model No. :.....

Bid Specification (Para wise)	*Bidder's Compliance – Para wise	**Page No. of the technical brochure where the compliance is mentioned

(add *separate sheets* depending upon the space requirement)

* **Leaflets / Technical Brochures / Product Data Sheets** of the Model offered **highlighting features** of the product offered **must be attached** in support of the information provided above.

** It is **mandatory** to mention the page no(s) in the format as mentioned above.

Signature of the Bidder

Name :

Date:

Place:

Format: Price Bid/BoQ

- 1) Price bid format (BoQ) is **not enclosed** in this bid document. It has to be downloaded from the **e-procurement portal** <https://assamtenders.gov.in>. (under the respective bid reference No.).

Any labour cess, if applicable, shall be paid extra.

- 2) PRICE BID/BoQ (in the excel Format) has to be submitted **online only**. The **price bid format (excel sheet available in e- Tender portal)** is specific to a bid and is not interchangeable. The price bid format file shall be **downloaded from the e- Tender portal** by the bidder and quote the **prices in the respective fields before uploading it**. The Price bids submitted in any other formats will be treated as **non- responsive**. Multiple price bid submission by bidder shall lead to cancellation of bid.

Important Notes:

1. **CMC/AMC (to be filled by bidder from 3rd year onwards). CMC price quoted shall be taken into consideration for L1 determination. Po for CMC shall be issued after warranty period only as per convenience of the purchaser.**

Annexure-VII:

Annexure to Order No. F.No. 6/18/2019-PPD

We M/s _____ have read the clause regarding restrictions on procurement from a country which shares a land border with India, we certify that we are not from such a country/or if from such a country, has been registered with the Competent Authority. We hereby certify that we fulfil all requirements in this regard and is eligible to be considered.

Yours faithfully

For (type name of the firm here)

Signature of Authorized Signatory

Name:

Designation:

Phone No.:

Place:

Date:

(Affix Seal of the Organization here, if applicable)

ANNEXURES (Documents to be executed by the successful bidder)

Annexure I: Contract Form

Agreement

This Agreement (“Agreement”) is made on this _ day of by and between:

1. ASSAM CANCER CARE FOUNDATION, a not-for-profit company registered under Companies Act, 2013 Section 8(1) with registered address at

.....(hereinafter referred to as the “ACCF” which expression shall unless repugnant to the context thereof be deemed to mean and include its successors and assigns); and

2. [CONTRACTOR FULL NAME], a company duly incorporated and existing under the laws of , with its registered office at (hereinafter referred to as the “Contractor”, which expression shall, unless repugnant to or inconsistent with the context, mean and include any successors or permitted assigns).

Assam Cancer Care Foundation and Contractor are individually referred to as a “Party” and collectively to as the “Parties”.

WHEREAS:

a) Assam Cancer Care Foundation is, non-sectarian philanthropic organizations and is engaged in developing cancer care infrastructure for providing affordable treatment.

b) Contractor is [brief about the Contractor and its products/services.]

c) Assam Cancer Care Foundation, proposes to develop a distributed cancer care model to create patient-centric cancer institutions to deliver standardized and affordable care closer to patients’ homes and thereby strengthening the cancer care infrastructure in Assam and providing enhanced access to public (“Programme”).

d) For the purposes of the Programme, Assam Cancer Care Foundation issued a tender with reference number ACCF//XXXX/2023 dated [●] (“Tender”), to identify and engage Contractor(s) for a period of two years for supply, installation, commissioning, servicing and comprehensive maintenance of the Equipment and Services as mentioned in the tender document, which are required for the Programme by ACCF.

e) After evaluation of the bids received, and based on Contractor’s financial bid dated [●] (“Financial Bid”) and technical bid dated _ (“Technical Bid”) and pursuant to the mutual discussion between the Parties, Assam Cancer Care Foundation had, on satisfactory verification of the eligibility criteria (as specified in the Tender), accepted the Financial Bid and Technical Bid and issued its Letter of Intent dated (“Letter of Intent” or “LOI”) for following locations;

f) Assam Cancer Care Foundation and Contractor are now desirous of entering into this Agreement and recording the terms and conditions regarding the relationship between the Parties, the

price of Equipment, supply, installation, commissioning, servicing, warranty and maintenance of the Equipment, payment, penalty, etc.

g) On the basis of the terms and conditions as agreed in this Agreement, Assam Cancer Care Foundation shall issue Work Orders to the Contractor, as may be required for the purposes of the Programme.

NOW, THEREFORE, in consideration of the foregoing and other terms and conditions set forth in this Agreement and the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows.

1. This Agreement shall come into force and effect from the date on which it is signed and executed by the Parties ("Effective Date").

2. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the bid document referred to.

3. The following documents shall be deemed to form and be read and constructed as part of this Agreement, viz.:

- (a) all the documents submitted by the bidder as part of technical bid and price bid;
- (b) the Schedule of Requirements;
- (c) the Technical Specifications and other quality parameters;
- (d) the clarifications and amendments issued / received as part of the bid document
- (d) the General Conditions of Contract;
- (e) the Special Conditions of Contract; and
- (f) the Letter of Intent (LOA) as issued by ACCF

4. In consideration of the payments to be made by the ACCF to the Contractor as hereinafter mentioned, the Contractor hereby covenants with ACCF to supply, install and commission the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

5. ACCF hereby covenants to pay or cause to pay to the Contractor in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

6. Contract Price

(a) Price of the Laundromat:

<To be inserted location-wise>

(b) CMC: If applicable

< insert agreed CMC/AMC rate, if applicable>

7. Validity of this Contract:

This Contract shall remain valid for 1 years from the date it comes in to effect. However, the parties may choose to extend the contract with same terms and condition for a period of another year with mutual consent.

8. Delivery Schedule:

The Work Order Shall be issued by ACCF on as and when required basis during the currency of this contract. The location of delivery or installation and other terms and conditions shall be detailed in the Work Order.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the said (For the ACCF) in the presence of

Signed, Sealed and Delivered by the said(For the Contractor) in the presence of

(Signature, Name, Designation and Address with Office seal)

1) (Signature, Name and Address of witness)

2) (Signature, Name and Address of witness)

Annexure-II: Installation Certificate**INSTALLATION CERTIFICATE***(to be filled jointly by the Contractor, head of user institution &**Representative of the Ordering Entity individually for every equipment)*

Name of the Hospital & Hospital Code:			
Equipment Details			
Name of the Equipment & Code:		Order No:	
Make / Manufacturer		Order Date:	
Model		Order Value	
Quantity			
Serial no (s)			
Location / Department:			
Supply Receipt Date			
Installation Start Date		Completed Date	
Comprehensive Warranty Start Date		Comprehensive Warranty End Date:	
Preventive Maintenance Schedule (Specify Year & Month)			
YEAR	Visit 1	Visit 2	
Contact Details			
SUP.CODE / Name of the Contractor			
Name of Service Engineer		Mobile No.	
Service Centre Manager's name		Mobile No.	
Date: Seal of Contractor:		Date: Hospital Seal :	

Service center address				
Accessories supplied				
Sl. No.	Item	Qty.	Serial No.	Remarks
To be filled by Institution				
Whether a digital Photograph of the installed equipment in the presence of the hospital personnel?				YES / NO
Whether the Demonstration of the equipment with accessories on the technical specification/key features was conducted to the satisfaction at the time of installation?				YES / NO
Whether training was conducted to the satisfaction at the time of installation?				YES / NO
Short supply items, if any				
Remarks of hospital authorities				
Recommend to release 90% payment YES ☐ NO ☐		The equipment is working satisfactorily YES ☐ NO ☐		
The equipment was installed and handed over on _____ (Installation date to be filled in by the Head of the institution or by the end user)				
Name of Service Engr.			Sign.	
Name of End User & Department			Sign.	
Signature of the Head of the Institution			Sign. & Seal	
Date:		Date: Hospital		
Seal of Contractor:		Seal :		

Annexure III: Warranty Declaration

WARRANTY DECLARATION

*(to be filled jointly by the Contractor, head of user institution & Representative of the Tender
Inviting or Ordering Entity individually for every equipment)*

Date:

Work Order No : dated.....

The equipment (Equipment Name) Model
No.....bearing serial no. was installed successfully
at.....(*Institution Name*) is offered with a comprehensive
warranty for a period ofYears starting from..... to
including all the following accessories;

Sl. No.	Name of the Equipment	Manufacturer's Name	Equipment Serial No.	Qty.

Name of the Contractor:	Name of the Hospital In-charge / End User:
Seal:	Seal:

Annexure IV: Performance Statement (Two Months Post Installation)**TWO MONTHS' PERFORMANCE STATEMENT***(to be filled by the hospital in-charge individually for every equipment)*

HOSP CODE / Hospital Name:				
SUP.CODE / Name of the Contractor				
Equipment Details				
EQPT CODE /Name of the equipment:		Order No:		
Make / Manufacturer		Order Date:		
Model		Order Value:		
Serial no.		Project Name		
Date of Installation		Location / Department		
Whether Equipment working satisfactorily without any problem for two months?			YES ☐	NO ☐
If No, provide details of equipment failure in the first two months <i>(attach additional details if any in a separate sheet)</i>				
BREAK DOWN DETAILS				
Break down Reported Date	Attended date	Rectified date	Attended by	Details of break down / service

Present status of the equipment		Working satisfactorily ☐ Not working satisfactorily ☐	
Recommended to settle the final 10% of payment		YES ☐ NO ☐	
Performance of accessories supplied			
Further Training		Required ☐ Not required ☐	
Remarks of hospital authorities			
Two month performance certificate was issued on _____ (date to be filled in by the Head of the institution or by the end user)			
Name of End User & Department		Sign.	
Signature of the Hospital In-charge		Sign. & Seal	
Date: Seal of Contractor:		Date: Hospital Seal:	

Annexure: V: Bank Guarantee (EMD)

Bank Guarantee Format for Furnishing EMD

To

Assam Cancer Care Foundation

3rd Floor, V K Trade Center, Opp. Down Town Hospital G S
Road, Guwahati 781022

Whereas..... (hereinafter called the “Tenderer”) has submitted their offer dated..... for the (hereinafter called the “Tender”) against the purchase’s Tender Reference No.....

KNOW ALL MEN by these presents that WE..... of..... having our registered office atare bound to Assam Cancer Care Foundation, Guwahati (hereinafter called the “Purchaser”) for the sum of for which payment will and truly to be made to the said Purchaser, the bank binds itself, its successors and assigns by these by presenting this bank guarantee. Sealed with the common seal of the said Bank thisday of20

AND WHEREAS we have agreed to give the Contractor such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the T e n d e r e r , up to a total of(amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the Contractor to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Tenderer before presenting us with the demand.

This guarantee shall be valid until theday of20.....

We theBranch..... undertake not to revoke the guarantee during its currency except with the previous consent of Assam Cancer Care Foundation for its release.

We theBranch..... further agree
that a mere demand by Assam Cancer Care Foundation, Guwahati is sufficient for us.....
Branch at to pay the amount (full or partial as indicated by ACCF) covered by the Bank Guarantee without
reference to the said Tenderer and protest by said Tenderer cannot be valid ground for
us.....Branch to decline payment to Assam Cancer Care Foundation.

..... (Signature of the authorized officer of the Bank)

.....

Name and designation of the officer

.....

.....

Seal, name & address of the Banks and address of the Branch

Bank Guarantee Format for Performance Security

To

Assam Cancer Care Foundation

3rd Floor, V K Trade Center, Opp. Down Town Hospital G S Road, Guwahati 781022

WHEREAS (name and address of the Contractor) (here in after called “the Contractor”) has undertaken, in pursuance of contact no.....dated..... to supply (description of goods and services) (herein after called “the Contract”).

AND WHEREAS it has been stipulated in the said Contract that the Contractor shall furnish you with a bank guarantee by a scheduled commercial bank recognised by you for the sum specified therein as security for compliance with its obligation in accordance with the contract.

AND WHEREAS we have agreed to give the Contractor such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the Contractor, up to a total of(amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the Contractor to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be Performed there under or of any of the contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until theday of20.....We theBranch undertake not to revoke the guarantee during its currency expect with the previous consent of the Assam Cancer Care Foundation, Guwahati in writing.

WeBranch further agree that a mere demand by Assam Cancer Care Foundation, Guwahati is sufficient for us..... Branch at to pay the amount covered by the Bank Guarantee without reference to the said Contractor and protest by said Contractor cannot to valid ground for us..... Branch to decline payment to Assam Cancer Care Foundation , Guwahati

.....
(Signature of the authorized officer of the Bank)

.....
Name and designation of the officer

.....
.....

Seal, name & address of the Banks and address of the Branch