PESHAWAR INSTITUTE OF CARDIOLOGY
MEDICAL TEACHING INSTITUTION

STANDARD BIDDING DOCUMENTS
FOR

Supply, Installation, Testing and Commissioning of Fire & Safety Complete Solution Along with FM 200 & Integration in Existing/Installed System.

for the Year 2021-22"

REF: (PIC-042)
Single Stage Two Envelope

S. No	Name of Item	Bid security	Tender Process
5	Supply, Installation, Testing and Commissioning of Fire & Safety Complete Solution Along with FM 200 & Integration in Existing/Installed System.	**03 %**	**Single Stage Two Envelope** **(2nd Time)**

(PROCUREMENT SPECIFIC PROVISIONS)

- Invitation for Bids (IFB)
- Bid Data Sheet (BDS)
- Special Conditions of Contract (SCC)
- Schedule of Requirements
- Technical Specifications
- Sample Forms
- Eligibility

Preface

These Bidding Documents have been prepared for use by procuring agencies in the procurement of goods through National Competitive Bidding (NCB).

In order to simplify the preparation of bidding documents for each procurement, the Bidding Documents are grouped in two parts based on provisions which are fixed and that which are specific for each procurement. Provisions which are intended to be used unchanged are in Part one, which includes Section I, Instructions to Bidders, and Section II, General Conditions of Contract. Data and provisions specific to each procurement and contract are included in Part Two which includes Section II, Bid Data Sheet; Section III, Special Conditions of Contract; Section IV, Schedule of Requirements; Section V, Technical Specifications; and the forms to be used in Section I, Invitation for Bids, and Section VI, Sample Forms.

This is Part Two and contains data and provisions specific to each procurement. Care should be taken to check the relevance of the provisions of the Bidding Documents against the requirements of the specific goods to be procured. The following general directions should be observed when using the documents. In addition, each section is prepared with notes intended only as information for the Procuring agency or the person drafting the bidding documents. They shall not be included in the final documents, except for the notes introducing Section VI, Forms, where the information is useful for the Bidder.

a. Specific details, such as the “name of the Procuring agency” and “address for bid submission,” should be furnished in the Invitation for Bids, in the Bid Data Sheet, and in the Special Conditions of Contract. The final documents should contain neither blank spaces nor options.

b. Amendments, if any, to the Instructions to Bidders and to the General Conditions of Contract should be made through the Bid Data Sheet and the Special Conditions of Contract, respectively.

c. Footnotes or notes in italics included in the Invitation for Bids, Bid Data Sheet, Special Conditions of Contract, and in the Schedule of Requirements are not part of the text of the document, although they contain instructions that the Procuring agency should strictly follow. The final document should contain no footnotes.

d. The criteria for bid evaluation and the various methods of evaluation in the Instructions to Bidders (Clauses 25.3 and 25.4, respectively) should be carefully reviewed. Only those that are selected to be used for the procurement in question should be retained and expanded, as required, in the Bid Data Sheet or in the Technical Specifications, as appropriate. The criteria that are not applicable should be deleted from the Bid Data Sheet.

e. Clauses included in the Special Conditions of Contract are illustrative of the provisions that should be drafted specifically by the Procuring agency for each procurement.

f. The forms provided in Section VI should be completed by the Bidder or the Supplier; the footnotes in these forms should remain, since they contain instructions which the Bidder or the Supplier should follow.

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Part Two

Section I. Invitation for Bids

Notes on the Invitation for Bids

The Invitation for Bids (IFB) has been issued as an advertisement in leading newspapers of general circulation in the Province of Khyber Pakhtunkhwa as well as on the web site of the Peshawar Institute of Cardiology (www.pic.edu.pk) by allowing at least fifteen days for NCB for bid preparation and submission.

The Invitation for Bids provides information that enables interested bidders to decide whether to participate. Apart from the essential items listed in the Standard Bidding Documents (SBD), the Invitation for Bids also indicates the important bid evaluation criteria or qualification requirement (for example, a requirement for a minimum level of experience in manufacturing a similar type of goods for which the Invitation for Bids is issued) so that the bidders should give their best and final prices as no negotiations are allowed.

The Invitation for Bids is incorporated into these Standard Bidding Documents (SBDs). The information contained in the Invitation for Bids (IFB) conforms to the bidding documents and in particular to the relevant information in the Bid Data Sheet.

INVITATION FOR BIDS

REF No. PIC-047

1. Peshawar Institute of Cardiology, Medical Teaching Institute (PIC-MTI) is the project of the Khyber Pakhtunkhwa (KP) Health Department to improve cardiac facilities in the public sector in the areas of research and treatment.
2. Peshawar Institute of Cardiology (PIC-MTI) invites sealed Bids from Manufacturer and Authorized distributes registered with Income Tax and reflected on Active Tax Payer list of FBR for the Below mentioned Item. Detailed of items, specification, submission, Opening and method of evaluation is provided in bidding documents. Bid Security/earnest money is required to be submitted in favour of Hospital Director.

S. No	Name of Item	Bid security	Tender Process
1	Fire & Safety Complete Solution Along with FM 200 & Integration in Existing/Installed System.	3%	Single Stage Two Envelope
2	Computers with Accessories	3%	
3	Network Switches	3%	
4	Printers	3%	
5	Online UPS	3%	
6	IP Unified Communication System	3%	
7	Professional Camera with Accessories	3%	
8	Server & Storage Accessories	2%	Single Stage Single Envelope
9	Bar code & Label Printer	2%	
10	Recliner chair	2%	
11	Computer on Wheels (Trolley)	2%	

Peshawar Institute of Cardiology.

3. Only typed bids on original letter pad, sealed & signed shall be submitted, hand written tender shall not be acceptable. The tenders must be according to hospital specification; alternate rates will not be acceptable.
4. Income Tax, stamp duty and Professional Tax or any other Government tax will be charged as per rules. (However, this hospital is exempted from the General Sales Tax).
5. A complete set of Standard Bidding Document may be downloaded by interested Bidder from websites of Peshawar Institute of Cardiology (PIC-MTI) (http://pic.edu.pk) or KPPRA (http://www.kppra.gov.pk/kppra/) after publication of this advertisement in the newspaper till last day for submission of Bid.
6. Procurements will be carried out as per Act and Rules of Khyber Pakhtunkhwa Public Procurement Regulatory Authority (KPPRA).
7. A Pre-Bid Meeting will be held on **January 27, 2022 at 10:00 AM (PST)** at the office of the Material Management Department of Peshawar Institute of Cardiology (PIC-MTI) Prospective Bidder are encouraged to attend the meeting.
8. Bids are to be delivered to the office of the Manager Material Management Department of Peshawar Institute of Cardiology (PIC-MTI) on or before **February 16, 2022 at 11:00 AM (PST).**
9. Bids shall be opened on the **same day at 11:30 PM (PST)** in the presence of bidders who choose to attend.
10. The advertisement is also available both on the websites of Peshawar Institute of Cardiology (PIC-MTI) (http://pic.edu.pk) and KPPRA (http://kppra.gov.pk).

11. Peshawar Institute of Cardiology (PIC-MTI) reserves the right to cancel any or all bids by assigning cogent reason under Rule 47 Khyber Pakhtunkhwa public procurement Regulatory Authority.

Hospital Director
Peshawar Institute of Cardiology (PIC-MTI)
5-A, Sector B-3, Phase-V, Hayatabad, Peshawar,
Ph: +92 91 9219645

Section II. Bid Data Sheet

DATA SHEET		
Reference ITB	Introduction/Description	Detail
ITB 1.1	Name of Procuring Agency of Government of Khyber Pakhtunkhwa.	**Peshawar Institute of Cardiology, Medical Teaching Institution Peshawar.**
ITB 1.1	Loan or credit or Project allocation number. Loan or credit or Project allocation amount.	**Budget allocated by Government Khyber Pakhtunkhwa to Peshawar Institute of Cardiology.**
ITB 1.1	Name of Project.	**Supply, Installation, Testing and Commissioning of Fire & Safety Complete Solution Along with FM 200 & Integration in Existing/Installed System. (PIC-042)**
ITB 1.1	Name of Contract.	**Supply, Installation, Testing and Commissioning of Fire & Safety Complete Solution Along with FM 200 & Integration in Existing/Installed System. (PIC-042)**
ITB 4.1	Name of Procuring agency.	**Peshawar Institute of Cardiology, Medical Teaching Institution Peshawar.**
ITB 6.1	Procuring agency's address, telephone, telex, and facsimile numbers.	**Peshawar Institute of Cardiology - MTI Plot No.5-A, Sector B-3, Phase-V, Hayatabad, Peshawar – Pakistan 091-9219645**
ITB 8.1	Language of the bid.	English
BID PRICE AND CURRENCY		
ITB 11.2	The price quoted shall be	**The bidder must quote FOR Prices**
ITB 11.4	The Price shall be fixed	**The quoted prices will be valid till 30th June 2022.**

PREPARATION AND SUBMISSION OF BIDS		
ITB 13.3 (d)	Qualification requirements.	**As mentioned Below**
ITB 14.3 (b)	Spare parts required for years of operation.	• **Two (02) Years free of cost provision of services and spare parts under warranty period.**
ITB 15.1	Amount of bid security.	**03 %** **The Bid security shall be submitted in a form of Call Deposit Receipt (CDR) or Bank Guarantee at the option of bidder in the name of Hospital Director Peshawar Institute of Cardiology. Bid Security shall be from the bank account of bidder who wish to submit bid. Ordinary cheque and Payment Order (PO) in the form of bid security will result in bid rejection summarily;** **Bid Security of the unsuccessful bidders shall be released as promptly as possible upon the successful Bidder's furnishing of the performance security;** **The bid security of successful bidder shall be returned once the successful bidder has signed the contract agreement and furnished the required performance security;** **The Bid security shall be forfeited:** • **If a bidder withdraws his bid during the period of bid validity; or** • **If a bidder doesn't accept the correction of his Bid Price, pursuant to Para above; or** **In the case of a successful bidder, if he fails to:** • **Furnish the Performance security in accordance with Para below;** • **Sign the contract agreement, in accordance with Para below.** **The copy of the bid security should be placed in Technical Bid not showing the amount.** **An affidavit shall be in technical bid that bid security is attached in the financial Bid.**
ITB 16.1	Bid validity period.	**The requisite bid security shall remain valid for a period of One Eighty (180) days beyond**

		from the date of opening of bids
ITB 17.1	Number of copies.	**One (original bid)**
ITB 18.2 (a)	Address for bid submission.	**Hospital Director** **Peshawar Institute of Cardiology - MTI** **Plot No.5-A, Sector B-3, Phase-V,** **Hayatabad,** **Peshawar – Pakistan**
ITB 18.2 (b)	IFB title and number.	**SUPPLY, INSTALLATION, Testing and Commissioning OF FM 200 SYSTEM & CONSTRUCTION OF FIRE COMPARTMENTS IN VARIOUS PARTS OF THE BUILDING (PIC-039)**
ITB 19.1	Deadline for bid submission.	**Feb 16, 2022 at 11:00 AM PST**
ITB 19.3	Pre-Bid meeting with the bidders	**Jan 27, 2022 at 10:00 AM (PST) at the office of Manager Material Management Department PIC-MTI**
ITB 22.1	Time, date, and place for bid opening.	**Feb 16, 2022 at 11:30 AM PST.** **at the office of Manager Material Management Department PIC-MTI**
BID EVALUATION		
ITB 23.1	Clarification of Bids	The Procuring agency may ask the Bidder in writing, only for clarification regarding the received documents in the bid; however, no change in the prices or substance of the bid shall be sought, offered, permitted or entertained. This communication shall be with the prior approval of chairman T&E committee.
ITB 25.3	Criteria for bid evaluation.	**Merit Point Evaluation** The items ranked highest in merit points (obtained through and based on technical and financial evaluation) will get unit rate central Contract.
ITB 25.4 (a) **ITB 25.4 (b)**	One option only. Delivery schedule. Relevant parameters in accordance with option selected:	Not Applicable
Option (i) **Option (ii)** **Option (iii)**	adjustment expressed as a percentage, or adjustment expressed in an amount in the currency of bid evaluation, or adjustment expressed in an amount in the currency of bid evaluation,	Not Applicable
ITB 25.4 (c) (ii)	Deviation in payment schedule.	Not Applicable

	Annual interest rate.	
ITB 25.4 (d)	Cost of spare parts.	Not Applicable
ITB 25.4 (e)	Spare parts and after sales service facilities in the Procuring agency's country.	Not Applicable
ITB 25.4 (f)	Operating and maintenance costs.	Not Applicable
ITB 25.4 (g)	Performance and productivity of equipment.	Not Applicable
ITB 25.4 (h)	Details on the evaluation method or reference to the Technical Specifications.	As in section on Technical Evaluation of bids.
ITB 25.4 Alternative	Specify the evaluation factors.	Not Applicable
Contract Award		
ITB 29.1	Percentage for quantity increase or decrease.	Number of items can be increased and Decreased as per requirement of the PE within permissible limits under the rules.

Section III. Special Conditions of Contract

Notes on the Special Conditions of Contract

Similar to the Bid Data Sheet in Section II, the clauses in this Section are intended to assist the Procuring agency in providing contract-specific information in relation to corresponding clauses in the General Conditions of Contract.

The provisions of Section III complement the General Conditions of Contract included in Part one, Section II, specifying contractual requirements linked to the special circumstances of the Procuring agency, the Procuring agency's country, the sector, and the Goods purchased. In preparing Section III, the following aspects should be checked:

a. Information that complements provisions of Part One Section II must be incorporated.

b. Amendments and/or supplements to provisions of Part One Section II, as necessitated by the circumstances of the specific purchase, must also be incorporated.

Table of clauses

SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement & qualify the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract.
The corresponding clause number of the GCC is indicated in parentheses.

GCC Ref No		
1. DEFINITIONS	1.1	**The Procuring agency is:** Peshawar Institute of Cardiology Medical Teaching Institution Peshawar
	1.1	**The Procuring agency's country is:** Pakistan
	1.1	**The Supplier is:** i. Manufacturer and/or Importer registered with relevant sales and income tax authorities and have requisite qualification and eligibility for supply of Goods in the specialized categories of health sector; and
	1.1	**The Project Site is:** Peshawar Institute of Cardiology
2. PERFORMANCE SECURITY	2.1	• The Supplier shall, within 14 days of receipt of Award Letter, provide a Performance Security for the due performance of the Contract to the amount of ten (10%) of contract price in shape of Call Deposit Receipt (CDR) or Bank Guarantee, at the option of bidder, in the name of Hospital Director Peshawar Institute of Cardiology from schedule bank of Pakistan; • Failure of the successful Bidder to submit the requisite performance security or to sign the contract agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security. In that event, the Client may award the contract to the next lowest evaluated bidder whose offer is substantially responsive. • The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract. • The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than 28 days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations.
3. INSPECTIONS AND TESTS	3.1	i. The Technical Evaluation shall be conducted by the

		Technical and Evaluation (T&E) Committee to undertake verification of documents submitted by the bidder/s along with the technical bids as well as to conduct the physical inspection of the various samples/relevant premises as per rent agreement or ownership etc. (Section-V -Technical Specification of the Part II of these SBDs). ii. Sample tests as well as pre-shipment inspections will also be carried out as and when needed before signing of contract agreement with all the successful bidders for Machinery & Equipment, instruments etc.
4. PACKING	4.1	In accordance with the GCC Clause 9 as well as provided in the relevant clauses of contract agreement of Peshawar Institute of Cardiology with the Supplier/s
5. DELIVERY AND DOCUMENTS	5.1	Applicable Delivery Mode: Delivered Duty Paid (DDP) as per contract agreement of the Successful with the Procuring Agency. The Supply, Installation, Testing and Commissioning will be responsibility of bidder. No charges will be paid additionally in case of penalty or any other charges.
6. WARRANTY	6.1	The Supplier shall provide warranty as per the terms and conditions of the Contract Agreement with Procuring Agency
	6.2	In partial modification of the provisions, the warranty period shall be as per contract terms and conditions. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the Contract. If, for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall, at its discretion, either: a. Make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests in accordance with SCC 4, or b. Pay liquidated damages to the Procuring agency with respect to the failure to meet the contractual guarantees. The rate of these liquidated damages shall be higher than the adjustment price used in bid evaluation.
	6.3	The period for correction of defects in the free warranty period is Two (02) years after installation with free parts and free services, including all incidental charges

7. PAYMENT	7.1	The method and conditions of payment to be made to the Supplier under this Contract shall be as follows: i. GCC Clause 16 as well as under the terms and condition in Contract Agreement with the Procuring Agency, the goods supplied under the Contract shall be delivered duty paid (DDP) under which risk is transferred to the buyer after the goods having been delivered; hence insurance coverage is seller's responsibility, for which they may arrange appropriate coverage. Payment shall be made in Pak. Rupees in accordance with the relevant and applicable government rules and regulations ii. On Shipment: Eighty (80) percent of the Contract Price of the Goods shipped shall be paid through irrevocable confirmed letter of credit opened in favor of the Supplier in a bank in its country, upon submission of documents specified hereunder iii. Payment shall not be made for partial and incomplete supply of goods. iv. The LC will be opened with the principal/Manufacturer directly. Non Third party will be allowed. v. The payment will be made 80/20 %. The 80% will be made on shipment arrival and the remaining 20% will be made after successful inspection by the committee.
8. PRICES	8.1	i. The bidder will not quote price of any item/s which is/are higher than the prices quoted by the bidder across the country to any procuring entity of the quoted item/s through public funding. ii. In case the bid price is higher than estimated cost, the Procuring agency has the right to reject the bid and scrap the process without any liability. iii. In case of single bid after technical evaluation, the procuring agency may carry out the market analysis before issuing a letter of consent to the successful bidder.
9. LIQUIDATED DAMAGES		As in relevant clauses of the Contract Agreement signed by the Supplier with the Procuring Agency. Penalties shall be imposed as per contract agreement and blacklisting & debarment guidelines of the department if the firm deviates from Contract Agreement.
10. RESOLUTION OF DISPUTES		The dispute resolution mechanism to be applied will be pursuant to relevant clauses of Contract Agreement signed by Supplier with the Procuring Agency under KPPRA Regime. If at all required, the jurisdiction of Court shall be of

		Peshawar, Khyber Pakhtunkhwa.
11. GOVERNING LANGUAGE	11.1	The Governing Language shall be: English
12. APPLICABLE LAW	12.1	The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan, which includes the following legislation: i. The KPPRA Act 2012 ii. The KPPRA Rules 2014 iii. The Contract Laws iv. The General Financial Rules of the Govt. of Khyber Pakhtunkhwa and all the v. Relevant laws, rules and regulations pertaining to budgeting & financial management of public fund vi. The Bonded Labor System (Abolition) Act of 1992 vii. vii. The Factories Act 1934
13. NOTICES	13.1	**Procuring Agency address for notice purposes**: Hospital Director Peshawar Institute of Cardiology, MTI Plot No.5-A, Sector B-3, Phase-V, Hayatabad, Peshawar – Pakistan. Email: Shafa.sawal@pic.edu.pk **Supplier's address for notice purposes:** As mentioned in their bidding document
14. Duties & Taxes	14.1	The Unit price quoted by the bidder shall be: inclusive of all applicable duties and taxes. All prices shall include relevant taxes & duties, where applicable. The benefit of exemption from or reduction in the GST or other taxes shall be passed on to the Procuring Agency.

Section IV. Schedule of Requirements

1. As detailed elsewhere in this document, 3% of bid security of the total bid value of the quoted equipment shall be submitted by each bidder on the total quantity of items for which bid is being submitted. The mode of provision of bid security shall be in accordance with the modalities as laid down in the relevant KPPRA Rules and these Revised Standard Bidding Documents.
2. Manufacturers/ Importers/Authorized Dealers for procurement of quoted Equipment.
3. All certifications (i.e Manufacturer authorization, ISOs,) and data/ documents shall be valid. T&E committee will carry out the verifications before award of contract and in case of any fraudulent practice; legal action will be taken against the bidder concerned. Any certificate expires before bid opening will not be consider.
4. Non-Provision of mandatory documents mention in these SBDs shall lead to disqualification of the firm / quoted items.
5. Bid document and required documents must be submitted in Hard Tap binding.
6. The order may increase / decrease as per requirement / decision of the procuring entity within permissible limits under the rules and in this connection no claim shall be entertained.
7. The Procuring Agency, at any stage of the procurement proceedings, having credible reasons for or prima facie evidence of any defect in Supplier's capacities may require the Suppliers to provide information concerning their professional, technical, financial, legal or managerial competence.
8. The Procuring Agency has the right to inspect the premises of bidder to inspect the setups ensuring proper after sales services, documents mentioned in technical bids and any other relevant details. Premises (office/workshop) of bidder shall be insured through ownership/or Rent agreement.
9. The Bid security shall be from bank account of the bidder who wish to submit bid. Ordinary cheque and Payment Order (PO) in the form of bid security shall result in bid rejection.
10. The Unit price quoted by the bidder shall be **inclusive** of all applicable duties and taxes. All prices shall include relevant taxes & duties, where applicable. The benefit of exemption from or reduction in the GST or other taxes shall be passed on to the Procuring Agency.
11. The bidder must be registered with Income / Sales Tax Department, reflected as Active Tax Payer on the list of FBR.NTN/KNTN and KP Professional tax
12. In case of the Importers/Authorized Dealers, the firm will ensure that the items are acquired from the original manufacturer and are procured through proper channel as advised by the original manufacturer.
13. The bidder shall provide an undertaking that the bidder has not been declared black listed by any Governmental/ Semi-Governmental institutions.
14. Bidders shall not be eligible to bid if they are under a declaration of Ineligibility for corrupt and fraudulent practices issued by any government organization in accordance with the Section 44(1) KPPRA Rules 2014

15. The prices shall be quoted for supply, installation, testing and commissioning of all items inclusive of taxes to the Office of Peshawar Institute of Cardiology 5-A, Sector B-3, Phase-V, Hayatabad, Peshawar.
16. All reservations in SBDs shall be submitted in writing in the pre-bid meeting by authorized person/representative of the firm.
17. The firm should quote Both prices CNF and FOR. Single price will be considered as non-responsive.
18. The schedule for supply of goods shall be as under**:**
    i. All work shall be done within One (01) year
19. The Penalty on late supply of goods after One (01) year shall be charged as under
    ii. Penalty @ 2% for late supply up to 15 days.
    iii. Penalty @ 5% for late supply after 15 days up to 30 days.
    iv. Penalty @ 07 % for late supply beyond 30 days

List of Equipment

Supply, Installation, Testing and Commissioning of Fire & Safety Complete Solution Along with FM 200 & Integration in Existing/Installed System. (PIC-042)

Evaluation Criteria

Total Marks (Technical Criteria + Financial Criteria): TM: 70 + 30 =100

1. Applicant has to score minimum 49 marks to get qualified;
2. Applicant must provide all the required documents as an evidence against each evaluation criteria.

S.No	Category	Weightage/Marks
1	Organization profile	11
2	Experience Record	24
4	Personal Capabilities	12
5	Office location	5
6	Warranty	8
	Financial Strength	10

S.No	Eligibility Criteria/Mandatory	Documents Required
1	Registration with SECP or Registrar of firm	Registration certificate with Security and Exchange Commission of Pakistan
2	Must have relevant Experience for at least two years	Relevant experience certificate/ Letter of Award/ Acceptance
3	Years of registration with PEC in relevant category and financial limits having codes relevant to (ME-02 & EE-04)	Applicant registration certificate with PEC in relevant specialty (ME-02 & EE-04).
4	Application registration with Tax Authorities	Applicant Income Tax & Sales Tax Registration certificate and certificate of registration with KPRA and reflected on Active Tax Payer List (ATL)
5	Applicant declaration that it has never been black listed with any Government organization	Applicant declaration on Stamp paper
6	Applicant declaration of Principal's material Manufacturer /Seller / Support / supplier should be Authorized dealer of the product.	Authorization letter form manufactures for major items of BOQ/Data sheet

S.No	Description	Max Points	Detail of Points
A	**Organization Profile**		
1	Registration with SECP or Registrar of Firm	2	SECP: 02 Point Registrar of Firm: 01 Points
2	Years of registration with PEC in relevant category and financial limits having codes relevant to (ME-02 & EE-04)	5	4 years or more: 5 points 2 to 3 years: 04 points Less than 02 years: 0 point
3	Years since Income tax payer	3	2 years or more: 3 points 1 to 2 years: 02 points Less than 01 years: 0 point
	Sub-Total	**11**	

B	**Experience Record**		
1	Project completed to the worth of 60 million or more or more of similar nature (supply/ installation/ testing/ commission/ maintenance) in last five (05) years.	16	5 or more projects: 16 points 3 to 4 projects:12 points 1 to 2 projects: 08 points
	Project in hand to the worth of 60 million or more of similar nature (supply/ installation/ testing/ commission/ maintenance)	8	3 or more projects: 08 points 1 to 2 projects: 5 points
	Sub-Total	**24**	
C	**Personnel Capabilities**		
1	Number of Graduate Electrical/Mechanical engineers registered with PEC in employment of the firm	4	03 or more engineers:04 points Less than 3: 0 points. (Documents/Degree must be attached)
2	experience of Graduate Electrical/Mechanical engineers in number of years (Lead)	2	03 or more years: 2 points Less than 3: 0 points (Documents/degree must be attached)
3	Number of Diploma (DAE/B. Tech) Electrical/Mechanical engineers in employment of the firm	4	05 or more Diploma engineers: 04 points Less than 3: 0 points. (Documents/degree must be attached)
4	Experience of Diploma (DAE/B. Tech) Electrical/Mechanical engineers in employment of the firm	2	02 or more years: 2 points Less than 2: 0 points. (Documents/degree must be attached)
	Sub-Total	**12**	
Warranty			
1	Warranty with parts and services	**5**	Warranty with parts and services for 02 years: 5 Points Warranty with parts and services for 01years: 03 Points Warranty with parts and services for less than 01 years: 00 Points
2	Post Maintenance Service in percentage (%)	**3**	Certificate of Post Maintenance Service in percentage on the Letter Head of Bidder for 03 years: 03 points Certificate of Post Maintenance Service in percentage on the Letter Head of Bidder for 02 years: 02 Point Less than 02 years: 00 Point
	Dub-Total	**8**	
Office Location			
1	Applicant must have functional office	**5**	Office in KPK verifiable with rent agreement: 03 Points Office at National Level: 02 Points
	Sub-Total	**5**	
Financial Capabilities			
1	Financial audit report (Turnover recent one years)	**10**	More than 120 million: 10 Points More than 80 to 120 million: 8 Points More than 50 to 80 million: 05 points Less than 50 million: 00 Points
	Sub-Total	**10**	
	Total	**70**	

Financial Criteria (30 Marks):

S #	Parameters	Sub-Parameters	Total Marks: 30
	Price		**30**
		Lowest Price will get full marks. The formula to calculate the marks for the price submitted is: [Lowest Price (Fm)/Price of Bid under consideration (F)] x100 x 0.30	30

Total Marks (Technical Criteria + Financial Criteria): 100

The bidders achieving a minimum of **49** marks (i.e., 70%) out of **70** marks in the Technical Evaluation will be declared technically qualified. Financial bids of only technically qualified bidders will be opened publicly at the time to be announced by the Procuring Agency. The Financial Bids of technically disqualified bidders will be returned un-opened to the respective Bidders. After getting the financial score from the remaining **30** marks, the two scores will be combined to identify the highest ranking firm.

Merit Point Evaluation Methodology: Contract will be awarded to the lowest evaluated responsive firm which gets the maximum marks and becomes the highest ranking in the Combined Evaluation calculated through the Merit Point Average Methodology which puts greater emphasis on non-price factors like stringent global certifications on Conformance Specifications (i.e., meeting the required technical specifications), Performance Specifications (i.e., meeting the requirements the product is designed for) leading to customer satisfaction verification, certifications of the technical staff, provision of maintenance & services, provision of training on equipment and post-warranty services etc. The following weightages will be given to the technical and financial scores:
Technical Score: 70
Financial Score: 30

Application-Form

All i firms, Companies, AOP interested are requested to complete the information in this form. Evidence is to be provided against each criterion in mentioned above

Sr.no	***Description***	Stauts
1	SECP Registration or firms registration	*State (Yes/No)*
2	Years of Registration of firm with PEC	*State Number of Years*
3	Income Tax Payer since number of years	*State Number of Years*
4	Project completed to the worth of 60 million or more or more of similar nature (supply/ installation/ testing/ commission/ maintenance) in last five (05) years.	*State Number of Projects*
5	Project in hand to the worth of 60 million or more of similar nature (supply/ installation/ testing/ commission/ maintenance)	*State Number of Projects*
6	Number of Graduate Electrical/Mechanical engineers registered with PEC in employment of the firm	*State Number of Engineers*
7	Experience of Graduate Electrical/Mechanical engineers in number of years (Lead)	*State Years of Experience of Lead Engineer*
8	Number of Diploma (DAE/B. Tech) Electrical/ Mechanical engineers in employment of the firm	*State Number of Lead Diploma Engineer*
9	Experience of Diploma (DAE/B. Tech) Electrical/ Mechanical engineers in employment of the firm	*State Years of Experience of Lead Diploma Engineer*
10	Warranty with parts and services	*State Number of years*
11	Post warranty Maintenance Service in percentage (%)	*State Number of years*
	Applicant must have functional office in KPK	*State (yes/No)*
13	Applicant must have functional office at National level	State (yes/No)
14	Financial audit report (Turnover recent one years)	State (yes/No)

TECHNICAL SPECIFICATION

Supply, Installation, Testing and Commissioning of FIRE & LIFE SAFETY FOR HEALTHCARE FACILITY

Total building fire protection for life safety is more necessary in healthcare facilities than in other occupancies because of the nature of the occupants. A significant percentage of occupants in hospitals and nursing homes are incapable of self-evacuation or are ambulatory but incapable of perceiving a fire threat and choosing a rational response. Therefore, fire protection is based on a "defend-in-place" principle and cannot depend on any one safeguard.

As a result, healthcare facility design and operation must incorporate methods by which a fire can be detected early, contained, and fought rapidly and successfully. Fire safety requirements include fire-resistive construction, compartmentation, fire-alerting facilities, and control of smoke movement. In addition, it is critical that every healthcare facility have a fire and evacuation plan, including a disaster plan, with which all personnel are familiar. Personnel should be trained in emergency procedures, including how to sound an alarm, move or evacuate patients, and contain the fire. Emergency drills should be conducted on each shift at least quarterly, with at least 12 drills held every year

Index:

LISTING AND AGENCY REQUIREMENTS

All components shall be UL listed (Underwriters Laboratories, Inc.), FM Approved, VdS Approved (VdS Laboratories). The products should comply with applicable EN 54 and NFPA standards (National Fire Protection Association).

National Fire Protection Association (NFPA) Codes:

NFPA 13	–	Sprinkler System
NFPA 15	–	Water Spray Fixed System
NFPA 750	--	Water Mist System
NFPA 16	–	Deluge, Foam-Water and Foam- Water Spray System
NFPA 20	–	Fire Pumps
NFPA 70	–	National Electric Code (NEC)
NFPA 70	–	Article 300 – Wiring Methods
NFPA 70	–	Article 760 – Fire Protective Signaling System
NFPA 72	–	National Fire Alarm Code
NFPA 101	–	Life Safety Code
NFPA 110	–	Emergency Standby Power System
NFPA 2001	–	Standard for Clean Agent Fire Suppression

VdS Laboratories (VdS) Standards:

VdS CEA 4001:	Sprinkler Systems, Planning and Installation
VdS 2465en:	Transmission protocol for Alarm Systems (AS)
VdS 2095en:	Automatic Fire Detection and Fire Alarm Systems, Planning and Installation
VdS 2135en:	Graphic Symbols for Alarm Systems
VdS 2380en:	Fire Extinguishing Systems using non-liquefied Inert Gases
VdS 2381en:	Fire Extinguishing Systems using Halocarbon Gases
VdS 2893en:	Maintenance of operational readiness of fire extinguishing systems with gaseous extinguishing agents, Leaflet

Underwriter Laboratories (UL) Standards:

UL Standard 217	Smoke Detectors, Single and Multiple Station
UL Standard 228	Door Closer – Holders for Fire Protective Signaling System
UL Standard 268	Smoke Detectors for Fire Protective Signaling Systems.
UL Standard 268A	Smoke Detectors for Duct Applications.
UL Standard 521	Heat Detectors for Fire Protective Signaling Systems.
UL Standard 464	Audible Signaling Appliances.
UL Standard 38	Manually Activated Signaling Boxes.
UL Standard 346	Water Flow Indicators for Fire Protective Signaling Systems.
UL Standard 1481	Power Supplies for Fire Protective Signaling Systems.
UL Standard 1638	Visual Signaling Appliances.
UL Standard 1971	Visual Signaling Appliances
UL Standard 864	Fire alarm / suppression system

1. INTELLIGENT ADDRESSABLE FIRE ALARM / DETECTION SYSTEM

1.1 Installation shall be made in accordance with the following standards:

- National Fire Protection Association Standard 72
- VdS 2095, Automatic Fire Detection and Fire Alarm Systems, Planning and Installation
- Local Protective Signaling Systems
- Auxiliary Protective Signaling System
- Remote Station Protective Signaling Systems
- Local Code and Authorities Having Jurisdiction (AHJ)

1.2 Fire Alarm/Detection Control Panel

The Fire protection control panel shall consist of (at minimum); a central control processor, a display & control membrane, signaling line communications processor, primary system power supply, secondary power supply and enclosure(s). The basic configuration shall provide ample space for expansion of input / output options (signals, relays, etc.). Auxiliary enclosures shall be available for further system expansion should this be necessary.

Each Panel (controller) should be equipped with necessary hardware for both side's real time communication between PC (for BMS) and Panle (Controller). The Panel should have Ethernet TCP/IP, Modbus TCP/IP or Modbus RTU based communication facility and must be provide register info for communication with third party HMI. The Panel (controller) should support windows based Software for real time programming and remote monitoring of system status and alarms.

1.2.1 Intelligent Addressable Fire Alarm Control Panel (Control Panel Expandable up to 16 loop) having extinguishing control capability for Clean Agent, Pre-Action for sprinklers.

Cabinet with cutaway for built-in operating panel, containing the master control unit in microprocessor/ SMD-technology. Incl. power supply unit, charging unit and voltage converter.

The Main controller should use **100% redundant** (duplicated) system structure. The occurrence of a fault in the active system causes the system to be automatically switched over to the second system running in parallel and for a system fault to be indicated. All functions, such as detection, triggering of alarms, plain text indication and controlling of fire alarm devices etc. remain unaffected safeguarding the full operability in the event of an error in the system. All hardware components of the devices (central processor, loop / line modules, output / input modules, control modules), as well as bus connections, etc., which are suitable for the installation into the fire alarm unit, are carried out redundantly. A simple duplicating of the processor unit is not sufficient.

1.3 System Components

All field devices for connection to the Loop Circuit shall be individually addressed and feature a microprocessor with a non-volatile memory. All devices should be built in Short circuit isolator. This is the basis for the Distributed Intelligence architecture. Each device shall continuously monitor performance within itself, perform critical decisions and report accordingly only when required to the attached control panel.

2. CLEAN AGENT FIRE SUPPRESSION SYSTEM

2.1 SCOPE:

This specification outlines the requirements for a “Total Flood” Clean Agent Fire Suppression System utilizing FM-200®, NOVEC-1230® as the fire extinguishing agent and with a detection and control system. The work described in this specification includes all engineering, labor, materials, equipment and services necessary, and required, to complete and test the suppression and detection system.

2.2 APPLICABLE STANDARDS AND PUBLICATIONS:

The design, equipment, installation, testing and maintenance of the clean agent System shall be in compliance and accordance with the applicable requirements set forth in the latest edition of the following codes, standards, and third-party approval agencies:

- NFPA No. 2001 - Clean Agent Fire Extinguishing Systems
- VdS 2381en - Fire Extinguishing Systems using Halocarbon Gases
- NFPA No. 70 - National Electrical Code
- NFPA No. 72 - National Fire Alarm Code
- VdS 2465en – T ransmission protocol for Alarm Systems (AS)
- VdS 2095en - Automatic Fire Detection and Fire Alarm Systems, Planning and Installation
- FM Approvals
- Underwriters Laboratory
- VdS Approvals
- Requirements of the Authority Having Jurisdiction (AHJ)

The standards listed, as well as all other applicable codes and standards shall be used as "minimum" design standards. Also to be considered are the requirements of the "Authority Having Jurisdiction" and good engineering practices.

2.3 REQUIREMENTS:

The Clean Agent Fire Suppression System installation shall be made in accordance with the drawings, specifications and applicable standards. Should a conflict occur between the drawings and specifications, the specifications shall prevail.

2.4 QUALITY ASSURANCE:

A. MANUFACTURER:

1) The manufacturer of the clean agent system hardware and detection components shall have a minimum of 10 years experience in the design and manufacture of similar types of suppression systems and who refer to similar installations providing satisfactory service.
2) The name of the manufacturer, part numbers and serial numbers shall appear on all major components.
3) All devices, components and equipment shall be new, standard products of the manufacturer’s latest design and suitable to perform the functions intended.
4) All devices and equipment shall be U.L listed & FM approved OR VdS approved.
5) Locks for all cabinets shall be keyed alike.

B. INSTALLER:

1) The installing contractor shall be trained by the supplier to design, install, test and maintain a clean agent system.
2) The installing contractor shall be an experienced firm regularly engaged in the installation of automatic clean agent, or similar, fire suppression systems in strict accordance with all applicable standards.
3) The installing contractor must have a minimum of five (5) years' experience in the design, installation and testing of clean agent, or similar, fire suppression systems. A list of systems of a similar nature and scope shall be provided on request.
4) The installing contractor shall maintain, or have access to, a clean agent recharging station. The installing contractor shall provide proof of his ability to recharge the largest clean agent system within 24 hours after a discharge. Include the amount of bulk agent storage available.
5) The installing contractor shall be an authorized stocking distributor of the clean agent system equipment so that immediate replacement parts are available from inventory.
6) The installing contractor shall show proof of emergency service available on a twenty-four hour, seven-day-a-week basis.

C. SUBMITTALS:

1) The installing contractor shall submit the following design information and drawings for approval prior to starting work on this project:

a) Field installation layout drawings having a scale of not less than 1/8"=1'-0" (1:100m) detailing the location of all agent storage tanks, pipe runs including pipe sizes and lengths, control panel(s), detectors, manual pull stations, abort stations, audible and visual alarms, etc.

b) Auxiliary details and information such as maintenance panels, door holders, special sealing requirements and equipment shutdowns.

c) Separate layouts, or drawings, shall be provided for each level, (i.e.; room, underfloor, and above ceiling) and for mechanical and electrical work.

d) A separate layout or drawing, shall show isometric details of agent storage containers, mounting details and proposed pipe runs and sizes.

e) Electrical layout drawings shall show the location of all devices and include point-to-point conduit runs and a description of the method(s) used for detector mounting.

f) Provide an internal control panel wiring diagram which shall include power supply requirements and field wiring termination points.

h) Complete hydraulic flow calculations, from UL & FM Approved / VdS Flow Calculation Program, shall be provided for all engineered Clean Agent systems. The individual sections of pipe to be used, as shown on the isometrics, must be identified and included in the calculation. Total agent discharge time must be shown and detailed by zone.

i) Provide calculations for the battery stand-by power supply taking into consideration the power requirements of all alarms, initiating devices and auxiliary components under full load conditions.

j) A complete sequence of operation shall be submitted detailing all alarm devices, shutdown functions, remote signaling, damper operation, time delay and agent discharge for each zone or system.

k) Submit drawings, calculations and system component data sheets for approval to the local Fire Prevention Agency, owners Insurance Underwriter, and all other Authorities Having Jurisdiction before starting installation. Submit approved plans to the Architect/Engineer for record.

D. **AGENT REQUIREMENTS**

SYSTEM DESCRIPTION AND OPERATION:

A) The system shall be a Clean Agent Fire Suppression System utilizing FM-200® , NOVEC-1230® as the fire extinguishing agent supplied.

B) The Clean Agent Fire Suppression System shall provide a minimum design concentration of 7%, by volume for FM-200® and 4.5% for NOVEC-1230® in all areas and/or protected spaces (CLASS A,C Fires), at the minimum anticipated temperature within the protected area. Per NFPA 2001, the system design shall not exceed a maximum exposure limit concentration level of 10.5%, by volume, unless provisions for room evacuation, before agent release, are provided. All personnel should be able to leave the protected space prior to the discharge or at least within 5 minutes of the commencement of discharge.

C) The system shall be complete in all ways. It shall include all mechanical and electrical installation, all detection and control equipment, agent storage containers, suppression agent, system actuation equipment, discharge nozzles, pipe and fittings, manual release and abort stations, audible and visual alarm devices, auxiliary devices and controls, shutdowns, alarm interface, caution/ advisory signs, functional checkout and testing, training and all other operations necessary for a functional U.L. Listed and F.M. Approved /or VdS Clean Agent Fire Suppression System.

D) Provide two (2) inspections during the first year of service. Inspections shall be made at 6 month intervals commencing when the system is first placed into normal service.

E) The general contractor shall be responsible for sealing and securing the protected spaces against agent loss and/or leakage during the 10 minute "hold" period.

F) The system(s) shall be actuated by a combination of Photo and/or Multi-detectors installed in accordance with the guidelines stated in NFPA 72.

G) Detectors shall be wired in Sequential Detection method of operation, standard Cross-Zoned detection, or single detector release. No other detection / wiring arrangements will be acceptable.

H) Automatic operation of each protected area shall be as follows:

1) Actuation of one (1) detector, within the system, shall:

a) Illuminate the "ALARM" lamp on the control panel face.

b) Energize an alarm bell and/or an optional visual indicator.

c) Transfer sets of auxiliary contacts which can perform auxiliary system functions such as:

2) Operate door holder/closures on access doors.

3) Transmit a signal to a fire alarm system.

4) Shutdown HVAC equipment.

5) Actuation of a 2nd detector, within the system, shall:

6) Illuminate the "PRE-DISCHARGE" lamp on the control panel face.

7) Energize a pre-discharge horn or horn/strobe device.

8) Shut down the HVAC system and/or close dampers.
9) Start time-delay sequence (not to exceed 60 seconds).
10) System abort sequence is enabled at this time.

After completion of the time-delay sequence, the Clean Agent Fire Suppression System shall activate and the following shall occur:

1) Illuminate a "RELEASE" lamp on the control panel face.
2) Shutdown of all power to high-voltage equipment
3) Energize a visual indicator(s) outside the hazard in which the discharge occurred.
4) Energize a "System Release" audible device. (Optional)
5) The system shall be capable of being actuated by manual discharge devices located at each hazard exit. Operation of a manual device shall duplicate the sequence description above except that the time delay and abort functions SHALL be bypassed. The manual discharge station shall be of the electrical actuation type and shall be supervised at the main control panel.
6) The system shall be capable of providing a “PRE-ALARM” feature that can give advanced warning of a possible alarm condition.

E. GENERAL REQUIREMENTS:

The Clean Agent Fire Suppression System materials and equipment shall be standard products of the supplier's latest design and suitable to perform the functions intended. When one or more pieces of equipment must perform the same function(s), they shall be duplicates produced by one

Manufacturer.

All devices and equipment shall be U.L. Listed and F.M. Approved /or VdS approved.

3. FIRE FIGHTING SYSTEM

A. Design Conditions

A comprehensive fire protection installation shall be designed, supplied, installed and commissioned in view of a layout which will offer protection where needed.

The Fire Hydrant System installation must, in any case, be ready for operation before commissioning of any new building and/or equipment. The systems shall be designed in such a way that easy extension at minimum cost up to the final extension stage is provided.

B. Standards, Rules and Regulations

The design, installation and tests shall be accomplished in accordance with the NFPA Codes and Standards, latest edition (National Fire Protection Association). The equipment/material to be supplied for the firefighting installation shall be approved by one of the following authorities:

- **Factory Mutual, FM;**
- **British Standards;**
- **Kite Mark Approvals;**
- **Underwriter's Laboratory, UL;**
- **VdS German Standards;**

Warning signs and all equipment, which is to be operated, by the Fire Brigade and/or other local personnel shall bear descriptions in English and the local language. The Engineer may accept equipment and material without subject to approval.

C. **Scope of Supply**

The system shall be complete and functional in every respect, whether mentioned or not in these Specifications. Wherever required NFPA codes will supersedes/compliment these specifications. The General Scope of Supply and Work shall comprise mainly all equipment needed for firefighting purposes and, in addition, such equipment as is deemed necessary for safe and reliable operation of the different systems. The Scope of Work shall comprise the following, whereby alternative proposals are invited:

3.1 General Design Features

Equipment and material to be supplied must be useful to the ends of property conservation by preventing, limiting or not causing damage under the worst conditions and must be identifiable and available on the local market to the maximum extent. The firefighting installation shall be reliable and designed in accordance with international standards NFPA as specified.

3.2 Water Supply Installation and Fire Fighting Pumps

Water supply for Fire Hydrant System and inside hose stations shall be provided by a fire pump installation, installed and tested in accordance with NFPA 20, latest edition, comprising basic equipment as follows:

The Fire Pump shall be consisted of one Main Electric Driven, one standby Diesel Engine Driven & One Jockey Pump with all standard accessories as per NFPA20 (UL Listed & FM Approved).

The pump shall be governed by an independent controller, allowing automatic starting upon pressure drop within the water supply installation.

To maintain a uniform and relatively high pressure on the fire protection system a jockey pump shall be installed. The jockey pump shall be capable to make up the allowable leakage rate of the entire installation within ten minutes.

The fire pump shall take suction from a water storage tank of sufficient capacity. The size of the tank shall be such that effective fire protection is provided in case of fire in the area of maximum demand at this location.

The automatic start control panel shall conform to NFPA 20 standards and shall be an Factory Mutual Research Corporation (FM) approved. Underwriters Laboratories (IL) (ULC) listed for fire-fighting service. The controller shall be: D.O.L. starting type and Star delta starting type. The controller of suitable size for the power installed, shall be dimensioned for an interrupting capacity rating of at least 30 kA RMS sym. It shall be designed for wall (standard) mounted and floor mounted on a common base plate with pump and the motor, with ant vibration blocks and electric wiring.

The final rating of the fire pump will be determined by the result of pressure loss calculations and shall be subject to approval by the Engineer, however, minimum working pressure shall be 8.0 bars. To define the maximum area of demand.
Shall be considered on fire with usage of two 21/2" diameter fire hoses.

The probability of fire in the adjacent building at the same time shall be excluded, taking construction features of the building and general exposure criteria into account.

It is assumed that the building structure is of non-combustible construction, representing a defined fire resistance. Available openings in the walls exposed to the Power transformer may be sealed with a material of similar fire resistance to the walls.

The capacity for the water storage tank, if required for remote areas, shall allow a fire fighting duration of 60 minutes unless proven otherwise by the Contractor subject to the approval of the Engineer and NFPA.

3.3 Fire Hydrant & Standpipe System

a) Fire Hydrants
Supply, Installation of Hydrant Wet Barrel in cast Iron Body comply to BS-750 double delivery type Hose Outlets / Landing Valves should have Kite Mark approval.

b) Fire Hose Cabinets Outdoor
Supply, Installation of Hydrant Cabinet included of 2-1/2" Synthetic Hose UL Listed / LPCB & 2-1/2" Jet/Spray Nozzle Kitemark / UL Listed, Made of Mild Steel, Red Painted accordance with BS standard.

c) Fire Hose Reel Cabinets Inside
Supply, Installation of indoor Cabinet included of 1" Rubber Hose UL Listed / LPCB / Kitemark & 1" Fog Nozzle Kite Mark / UL Listed, Made of Mild Steel, Red Painted accordance with BS standard.

3.4 Low Pressure Water Mist System

3.4.1 DESIGN CRITERIA

While traditional water sprinkler or deluge systems remove only the heat element of the triangle, the small droplets in a water mist system quickly absorb as much energy that the droplets evaporate and transform from water to steam. Water mist droplets have a large surface area compared to their mass. The transformation of droplets from water (liquid face) to steam (gas face) requires a lot of energy which cools the surroundings of the fire with approximately 2400 kJ per litre evaporated water, and the steam that is generated by the evaporation will per one litre of water fill 1.64m3 at a temperature of 70 CO surrounding the fire. The evaporation of water in small droplets hereby both cools and reduces the oxygen concentration in the surroundings of fires. The cooling removes energy from the fire processes, and a reduction in the oxygen concentration works by reducing the oxidation processes, causing the oxidation processes to reduce the energy surplus.

The above works most effectively in enclosures with limited volume and ventilation, and the larger the fire, the better In this environment the energy release from fire will be able to evaporate large quantities of water, when water is being distributed in small droplets. The smaller droplets, the faster, and more water will be evaporated, and the faster the generated steam will reduce the oxygen concentrations to a level where the oxidation process stops generating enough energy surplus to be able to sustain the chemical fire processes. Without cooling this happens at an oxygen concentration reduction from 21% to approximately 13%. With cooling from face change of water from liquid to gas face, fires are extinguished at a higher oxygen concentration

typically between 18% - 16%.

In larger rooms and rooms with ventilation, the thermic up-ward draft from fire and ventilation carries the very small and light droplets away from the place of fire, and the same happens to steam if generated. Droplets which are a little bigger and therefore heavier have momentum to penetrate the thermic to get into the fire plume of flames. Here temperatures are higher, and the little larger water droplets evaporate right on the location of the oxidation processes. The temperatures are about 600-800 CO and steam from 1 litre of water has a volume of approximately 3.7 to 4.5 m3 which provides the water mist spray with an extended capacity for smothering fires in open and larger rooms, and locations with ventilation. Evaporation of water in the flame plume also reduces the temperatures in the fire plume near the fuel surfaces, and by the amount of heat radiation from flame plume to the fuel surface, which causes dramatic decrease in reaction velocities of the pyrolysis processes, and the breakdown of fuels into flammable pyrolysis gasses.

There are no perfect water mist droplet size. The firefighting capacities of water mist systems depend on the distribution of the droplet sizes in the spray, the water flow of the spray, the nozzle's locations, and the number of nozzles, and how this matches the location and the application the water mist system fire protects.
Contrary Sprinkler- and Gaseous fire protection systems which, to a large degree, are designed and approved to satisfy an array of simplified system tests for testing the systems to have sufficient firefighting capabilities, such as water and gas distribution tests, where water densities and spray patterns are measured, or extinguishing times for miniature cup fires are measured to satisfy standardized Approval demands. Watermist systems are, because of the complex spray parameters, approved for specified applications and locations based upon that the systems are actually being tested in full scale standardized fire tests which are similar to fires that are likely to happen in the applications and locations for which the water mist systems are being approved.
Water mist provides reliable fire protection based on modern technology and gives you several advantages, such as:

- Fast release.
- Compact design.
- Low water consumption.
- Higher safety level.
- Standard components.

One of the greatest challenges to engineering of Low Pressure Water mist fire suppression systems lies in determining whether the conditions of a particular test protocol are representative of the actual conditions in a given application based on an understanding of the dynamics of the interaction of Water mist with fire.
The following application parameters need to be determined as a minimum:

- Is the fuel like the test protocol (liquid or solid fuel, flash point, combustibility, quantity, arrangement)?
- Is the compartment volume equal to or less than the volume of the test room?
- Is the compartment height equal to or less than the test protocol?
- Is the compartment ventilation conditions similar (presence of fans, forced ventilation, etc., area of openings, position of openings)?
- are there more obstructions to the distribution of mist than the test protocol?
- Is the duration of protection provided by the listed system appropriate for the actual level of protection needed?.

A match needs to be established between test conditions on which the testing is based and the conditions of the actual installation and agreed through consultation with the authority having jurisdiction (AHJ), or other agencies with demonstrated qualifications in the field.
Water mist systems can be assumed to be effective if they:

- Use only components and equipment recognized by an ISO 17025 accredited testing laboratory.
- Are based upon the laboratory test report to a recognized test protocol;
- Are installed by trained personnel in accordance with the manufacturer's Water mist system design and installation manual.

Where a Water mist system application is not covered by a recognized standard fire test, additional testing might be required to meet the requirements of the AHJ.
The Water mist system can be a

- Wet pipe system, i.e. one that is permanently charged with water except the where there is potential for freezing, precautions should be taken to prevent the water in the pipework freezing.
- Dry pipe deluge type system with open nozzles.
- Pre-Action single or double interlock system.

The system can be designed to pr EN 14972-1 or NFPA 750 or local standards using Canute FHC Sprinkler Hydraulic Calculation Software, or another recognized hydraulic Calculation program.
It is assumed in the specification that the Water mist protection will form part of an integrated fire safety system as part of the building's design and that a fire detection system will also be installed to give warning of a fire as early as possible.

- Areas, rooms, or places where water discharge might present a hazard.

3.4.2 System design

The system shall be designed in accordance with the applicable standards, to the requirements of the authorities, classes having jurisdiction and to the guidelines of this specification regarding the products used.
The system shall not be installed in locations containing materials which may produce violent reactions or significantly hazardous materials when reacting with water and should be installed in locations where it is not likely to sustain physical damage.
Test connections shall be in the end of each section. Test connections shall be equipped with a device simulating the discharge from a single nozzle of the installation. Discharge from the test connection should be piped to a safe discharge location to make the test of the system an easy task.

3.4.3 Automatic systems

Ordinary hazard typically offices, hotels, data centres, small storage area, parking garages etc shall be protected by automatic low pressure water mist nozzles with 2 mm ultra-fast response bulbs. The system shall be fully automatic upon release, the nozzles should be fitted with 57 CO or 67 CO glass bulb except where there is a risk for high temperatures such as kitchen, saunas etc. The bulb should be maximum 30 CO above the nominal temperature in the area protected. This systems are normally wet pipe systems, i.e the pipes are filled with water and pressurized.

3.4.4 Pre-Action systems

Pre-Action systems are automatic systems where the pipes are filled with compressed air. Pre-Action systems are used in areas where there are a risk for freezing or where potential faulty discharge can be a safety issue, such as data centres. The pre-action system can be either single interlock or double interlock. Single interlock, the valve will open based on low air pressure. Double interlock, the valve will open based on a signal from the fire detection system and low air pressure.

3.4.5 Zoned deluge system

Zoned deluge system is used in ordinary hazard buildings for applications where automatic nozzles is not fitted for the purpose. Mainly in areas where the ceiling height

is more than 6 meter. Typically, atriums which is a horizontal deluge system and is designed to blend into the building structure for aesthetic appearance.
For every zone, a control valve is installed between the pump system and the Atrium pipe system to open for water to flow into the Atrium system. To activate the system, a double knock detection system should be used. One detector to localize the fire and one extra to confirm the fire exists.

3.4.6 Total flooding

Machinery spaces, typically generator rooms, turbine rooms etc where the risk is hydrocarbons, a total flooding low pressure water mist system should be installed. The system should be activated automatically by the fire detection system. Upon activation, all the nozzles within the area protected will be activated. The system can consist of one or more zones, each with its own zone valve.

3.4.7 Local application

Generators, hydraulic power units, bearings, etc where the risk is hydrocarbons, pool or spray, a local application low pressure water mist system should be installed. The system should be activated automatically by the fire detection system. Upon activation, all the nozzles within the area protected will be activated. The system can consist of one or more zones, each with its own zone valve.

3.4.8 Testing

Where a Water mist deluge system cannot be tested by actual flowing water through all the nozzles installed, means shall be provided to check that the deluge valve has opened when activated.

3.4.9 Calculations

The number of nozzles required depends on the roof structure, ceiling tile layout, mechanical and electrical services, and everything else that congests the roof or ceiling area. Obstructions that commonly cause the designer to exceed the estimated number of nozzles in the area of operation include wind bracing, lighting, cable trays, wide ducting, excessive structural, pipe racks and tall cabinets. Extra nozzles in the area of operation result in larger pumps and stored water tank size.
All calculations describing proposed works and referencing drawings should be approved by the Fire Engineer before procurement of all relevant materials. System piping shall be fully hydraulically designed, taking into consideration the entire piping system, to deliver the minimum required water flow and pressure to the assumed maximum area of operation. This would include the following.
Friction Loss, Flow Rates

4. FIRE COMPARTMENT AT EACH FLOOR

Occupants of health care facilities are generally presumed to be incapable of self-preservation. A significant percentage of occupants in hospitals are incapable of self-evacuation or are ambulatory but incapable of perceiving a fire threat and choosing a rational response. Health care facility design and operation must incorporate methods by which a fire can be detected early, contained, and fought rapidly and successfully. Accomplishing this requires careful planning of the health care facility and its day to-day operation.

Total building fire protection for life safety is more necessary in health care facilities than in other occupancies because of the nature of the occupants. At the same time, exits are slightly less important. The first principle of designing a fire-safe health care facility is that safety must not depend wholly on any single safeguard.

4.1 Building Construction

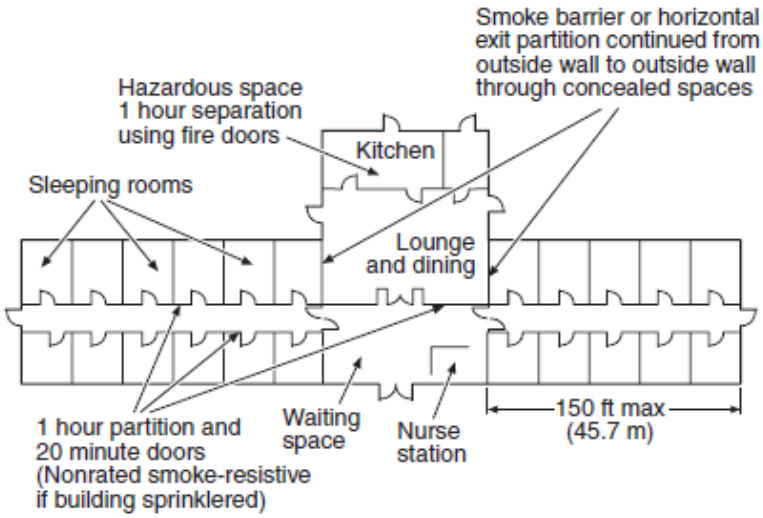
Because occupants of health care facilities must be defended in place, construction is an important factor, especially in multistory buildings. Buildings preferably should be constructed of noncombustible materials that resist the effects of fire and maintain structural integrity.

Buildings of two or more stories should be constructed of noncombustible materials with major structural members having at least a **2-hour fire resistance**. Materials that either burn or support combustion, although less desirable, are considered acceptable if special precautions are taken. An automatic sprinkler system is an essential part of the total fire defense system for combustible buildings.

4.2 Compartmentation/Subdivision of Building Spaces

4.2.1 Separation of Patient Sleeping Rooms.

Because it may not be possible to remove occupants during a fire, sleeping rooms other than the room of fire origin sometimes must serve as temporary areas of refuge. Therefore, sleeping rooms should be isolated from all other building spaces by fire-rated construction. Partitions should be continuous from the floor slab to the floor or roof above through any concealed spaces, such as those above suspended ceilings. If the building is protected by sprinklers, then walls are allowed be nonrated, provided the walls resist the passage of smoke, and they are permitted to terminate at the ceiling, provided the ceiling resists the passage of smoke



Typical Floor Plan for a Health Care Facility

4.2.2 Smoke Barriers.

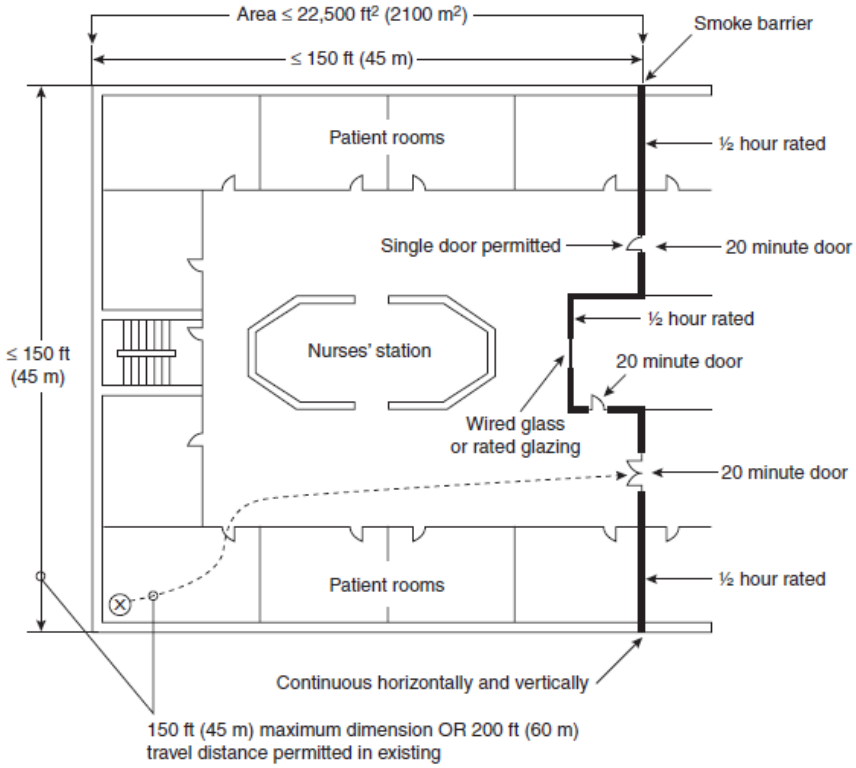
Every floor used by inpatients should be subdivided into at least two compartments by smoke barriers that also have a 1-hour fire resistance rating. A horizontal exit, when constructed to satisfy the additional criteria imposed on construction of smoke barriers, is a desirable alternative. Smoke barriers and smoke compartments play a very important fire safety role in health care facilities.

Subdividing each floor minimizes the number of occupants exposed to a single fire. More importantly, the barriers allow for horizontal evacuation of occupants to an area of refuge on the same floor. In a protect-in-place occupancy where evacuation is difficult, having the capability to evacuate horizontally is extremely important. Subdividing a space with a smoke barrier is required only on stories with patient sleeping areas that can accommodate more than 30 patients.

For stories that must be subdivided, there are two limitations on how large the smoke compartment formed can be related to area and travel distance from any point to a door in a smoke barrier. No smoke compartment can exceed 22,500 ft2 (2100 m2) nor can the travel distance from any part of a smoke compartment to the door in a smoke barrier exceed 200 ft (60 m).

One exception for existing health care occupancies is that the travel distance to reach the smoke barrier door need not be limited where neither the length nor width of the smoke compartment exceeds 150 ft (45 m).

Figure illustrate the basic dimensional criteria and features that constitute an appropriate smoke compartment arrangement health care facility. I addition to the features shown in Figure accumulation space must be provided on both sides of a smoke barrier to accommodate a certain number of people in an emergency based on factors that range from 30 net ft2 (2.8 m2) per patient for hospitals.



Smoke Compartment in a Health Care Facility

4.2.3 Protection of Vertical Openings

Fire, smoke, and other toxic products of combustion tend to spread vertically within a building. Special effort is required to prevent fire on one level from threatening the occupants above;

All shafts should be provided with fire-rated enclosures. Vertical openings connecting not more than three floors should be enclosed with fire barriers having a minimum 1-hour fire resistance rating. Two-hour rated enclosures should be provided for vertical openings connecting more than three floors. Openings to shafts should be limited to those necessary, and such openings must be protected. When designing partitions to enclose vertical shafts, consideration

should be given to the varying durability of materials. In spaces where partitions may be subject to mechanical injury, materials used to provide floor-to-floor separation should be able to resist damage in order to maintain the required fire resistance.

4.2.4 Means of Egress Design

Exits in health care facilities should be limited to doors leading directly outside of the building, interior stairs and smokeproof enclosures, ramps, horizontal exits, outside stairs, and exit
passageways. Vertical evacuation of occupants within a health care facility is, at best, difficult and time consuming. Therefore, horizontal movement of patients is of primary importance.
Horizontal passageways and doors opening into corridors and rooms used for sleeping or treatment should be wide enough to allow the horizontal movement of occupants, even those in beds or on gurneys. Relocation of patients is a slow process, even under favorable staff-to-patient ratios. Because of the time required to move patients, exit access routes should be protected against fire effects. Spaces open to the corridor should not be used for patient sleeping or treatment rooms, nor should hazardous contents or activities be permitted within them.

4.2.4.1 Horizontal Exits

A horizontal exit is a means of egress from one building to an area of refuge in another building on approximately the same level, or a means of egress through a 2-hour fire barrier to an area
of refuge at approximately the same level in the same building that affords safety from fire and smoke.

Partitions used as horizontal exits and smoke barriers should provide the fire resistance required for exits and, in addition, should satisfy the criteria for smoke barriers when appropriate. If possible, door openings should be limited to corridors, lobbies, or public spaces. The most desirable arrangement of mechanical systems is one in which the partitions forming the horizontal exit are not penetrated. If penetration by utilities or piping occurs, the space around the piping should be filled tightly with noncombustible materials and maintain the barrier's required fire resistance. If ducts penetrate partitions intended to be smoke barriers, combination fire/smoke dampers that close if smoke detectors within the duct activate should
be provided.

Two-hour fire barrier walls must be used to create horizontal exits. Such barriers must be vertically continuous and must penetrate any ceiling and continue to the floor or roof deck above. The fire barrier is allowed to be omitted on any story below, provided the floor below the lowest level on which the barrier exists and all supporting members are of a 2-hour fire-resistive construction. Because a horizontal exit implies that occupants will be transferred from one side of a partition to the other (horizontal evacuation), adequate space must be available to house occupants after movement.
In hospitals, **at least 30 net ft2 (2.79 m2)** per patient should be available on each side of the horizontal exit, allowing for accumulation of the total number of patients in adjoining compartments.

4.2.4.2 Interior Stairs.

Exit stairs should be designed to satisfy the criteria for interior stairs. Stairs should be enclosed with fire barriers, and openings into stair enclosures should be limited to those necessary for access and discharge purposes. Stairs must be properly protected from the effects of fire.

4.2.4.3 Exit Features

Egress capacity in non-sprinklered health care facilities is set at 0.6 in. (15.24 mm) per person for travel over stairs, whereas the capacity through doors and level passageways is calculated
at 0.5 in. (12.7 mm) per person. Where automatic sprinklers are provided throughout a building, exit capacity is increased to 0.3 in. (7.62 mm) per person for travel over stairs and 0.2 in.
(5.08 mm) per person for travel over level passageways.

Capacity is calculated using a “flow rate” principle. Flow rates assumed are for able-bodied persons because it is presumed that evacuation over stairs will involve only staff, visitors, and
ambulatory patients. No ambulatory occupants are expected to remain in the building under the defend-in-place concept, with those patients on the floor of fire origin being moved horizontally to an adjoining smoke or fire compartment. Limits on travel distance reflect anticipated slow movement.

Travel distance normally should not exceed the following:

1. 100 ft (30 m) between an exit and any room door intended for use as an exit access
2. 150 ft (46 m) between an exit and any point in a room
3. 50 ft (15 m) between any point in a sleeping room or suit of sleeping rooms and the exit access door of that room

Travel distance from any point on a floor to reach a door in a smoke barrier is limited to 200 ft
(61 m).

4.2.5 Exit Marking and Exit Illumination

Readily visible signs should mark all exits. Where access to exits is not immediately visible, access routes also should be marked. The entire means of egress must be continuously illuminated whenever the building is occupied. In some cases, normal street lighting is adequate for illumination of exit discharge. However, consideration should be given to the conditions that would result from a power failure. Emergency power is also required to illuminate the means of egress and exit marking.
Luminescent, fluorescent, or reflective material should not be substituted for required lighting.
Emergency power supplies should maintain illumination automatically in the event of a power failure without any appreciable interruption during the changeover from normal to emergency power. **Where a generator is provided, the delay should not be more than 10 seconds**. Where emergency power is supplied by a central system with an engine-driven generator, the design should minimize the probability of any single emergency simultaneously interrupting both normal and emergency power supplies. The switch(es) that transfers power from normal to emergency circuits is one place where normal and emergency circuits are required to merge. If this switch(es) is exposed to fire, it could simultaneously interrupt power to both normal and emergency circuits. The transfer switch and other electrical distribution panels and switch gear should be separated from the generator, as well as from the remainder of the building.

General Scope of work

Peshawar Institute of Cardiology - MTI (PIC-MTI) Hospital is located in phase 5, Hayatabad. PIC-MTI has 250 beds including 2 Intensive Care Units (ICU), 4 Cardiac Care Units, 6 Operation Rooms and 6 Catheterization Laboratories. Also having state of the art diagnostics services (Laboratory & Radiology). The specific objectives of this assignment will be:

a. To fulfil the legal requirements as outlined in OSHA 2007 and Legal Notice No. 31/2004,
b. Supply, installation, testing and commissioning of detection system including wiring of components with fire rated wire, Ms conducting, junction boxes with including of mechanical piping of MS schedule 40 high pressure piping and accessories as per FM-200 piping standard.

- Complete building assessment against any fire emergency.
- Complete fire safety design of the Building as per JCIA standards.
- Installation of Fire Points in the building as per standards.
- Provision of fire evacuation chairs
- Provision of fire evacuation Streture Trollies.
- Provision of Spill kits in the entire building as per need and design.
- Installation of fire resistant doors where required as per the proposed design.
- Emergency GO bags for paeds units.
- Supply installation and commissioning of Stair case pressurization having air flow of Fan will be installed in each stair ,
- Fan will be operated via Fire alarm signal (Fire alarm signal) to be provided to Fan panel from Fire Alarm system.
- In event of Fire Fan will operate to maintain constant pressure in stair case to avoid penetration of fire and smoke through stairs from one floor to another. Pressure Relief damper shall be installed in order to avoid excess pressure,
- pressure in stair shall be maintained as per standards.
- Personal Protection Equipment
- Rescue Rope
- Rescue Shoot

1. TERMS AND CONDITIONS

Period of Contract:

a) This contract shall be valid for a period of 12 months.
b) **Price:** Quoted rates shall be valid for the entire period of the contract.
c) **Performance:** The performance of the contractor will be continuously evaluated by the Building & Facilities Management Department PIC-MTI.
d) **Certification of bills:** A fitness certificate regarding performance and execution of FM 200 Fire suppression system, countersigned by Building & facilities Manager & Building Engineer PIC-MTI, will be submitted by the contractor along with their each monthly bill.
e) **Reports:** WBS, weekly progress report, check requests should be submitted to building Engineer for smooth execution of the project.
f) **Penalty:**5% penalty should be imposed if project is not completed in stipulated time period.

g) **Contractor staff accommodation:** Contractor must provide accommodation for his employees near to hospital. Hospital will not provide accommodation to contractor staff.

h) **Staff Training:** Contractor after the successful execution of the work will train our staff on FM200 system for at least one month under the supervision of well qualified & experience person. Training report will be submitted to Building Engineer PIC-MTI on daily basis.

i) **Factory Visit:** 3 person from PIC-MTI, Manager Building & Facilities, Building Engineer, Manager Procurement/ Astt Manager/Officer, prior to execution of work.

2. Annual maintenance requirements under the warranty Period:

1- Inspect fire dampers and fire stop flaps
2- Inspect all flues and fluepipes
3- Inspect disconnect switches for mechanical air conditioning and ventilation systems
4- Test cooking equipment fire protection systems; replace fusible links and sprinkler
5- Test emergency lighting
6- Drain and refill tank with fresh supply at least once a year

3. Maintenance requirement over Two (02) years:

-Test H2O2 CO2 and dry chemical extinguishers hydrostatically.
-Test insulation of emergency power generator winding.
-Empty stored pressure type extinguishers requiring hydrostatic test and subject to maintenance. Hydrostatically, test dry chemical, dry powder, and vaporizing liquid type extinguishers.
-Inspect dry pipe sprinkler system for obstruction and flush where necessary

4. Maintenance and appropriations required to ensure building Safety from fire:

1- Provide an engineering consulting report showing the suitability of FM200 system
2- To submit an engineering consultant report stating the efficiency of said systems.
3- Satisfactory report of the end user .i.e. Building & Facilities Management Department will be required to process the final bill.
4- Provide a report on automatic and manual warning and profiting that the sound of the alarm is high and audible throughout the site with the installation of a flash light next to the alarm
5- Conduct standard inspection tests on system to check that the FM200 system is working properly.

1. Bid Form and Price Schedules

Date:_____
IFB No:_____

To:

Hospital Director,
Peshawar Institute of Cardiology,
Medical Teaching Institution,
Peshawar.

Sir,

Having examined the bidding documents including Addenda Nos. [insert numbers], the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver [description of goods and services] in conformity with the said bidding documents for the sum of [total bid amount in words and figures] or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

If our Bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to _____ percent of the Contract Price for the due performance of the Contract, in the form prescribed by the Procuring agency.

We agree to abide by this Bid for a period of [number] days from the date fixed for Bid opening under Clause 22 of the Instructions to Bidders, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent	Amount and Currency	Purpose of Commission or gratuity

(if none, state “none”)

We understand that you are not bound to accept the lowest or any bid you may receive.

Price Schedule in Pak. Rupees

Name of Bidder_____ IFB Number_____ Page of_____

1	2	3	4	5	6	7
Item	Description	Country of Origin	Quantity	Unit price DDP named place	Total DDP per item	Unit price of Delivered duty paid (DDP) to final destination plus price of other incidental services if required[3]

Signature of Bidder _____

Note: In case of discrepancy between unit price and total, the unit price shall prevail.

2. Bid Security Form

Whereas [name of the Bidder] (hereinafter called "the Bidder") has submitted its bid dated [date of submission of bid] for the supply of [name and/or description of the goods] (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE [name of bank] of [name of country], having our registered office at [address of bank] (hereinafter called "the Bank"), are bound unto [name of Procuring agency] (hereinafter called "the Procuring agency") in the sum of for which payment well and truly to be made to the said Procuring agency, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or

2. If the Bidder, having been notified of the acceptance of its Bid by the Procuring agency during the period of bid validity:

   a. fails or refuses to execute the Contract Form, if required; or
   b. fails or refuses to furnish the performance security, in accordance with the Instructions to Bidders;

We undertake to pay to the Procuring agency up to the above amount upon receipt of its first written demand, without the Procuring agency having to substantiate its demand, provided that in its demand the Procuring agency will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including twenty eight (28) days after the period of bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

_____

[signature of the bank]

3. AGREEMENT DEED

FOR PROCUREMENT, INSTALLATION & MAINTENANCE OF EQUIPMENT

THIS AGREEMENT DEED is made on this day ____st of Month in the year _____ by and between; **Peshawar Institute of Cardiology**, **Medical Teaching Institute, Peshawar** situated at Phase-V, Hayatabad, Peshawar through its Hospital Director (hereinafter referred to as **'First Party'** which expression shall unless repugnant to the context mean and include its heirs, executors, administrators, successors and assigns)

And

M/s **[Mention Second Party] (**hereinafter referred to as **'Second Party'** which expression shall unless repugnant to the context mean and include its heirs, executors, administrators, successors and assigns). (both the above hereinafter collectively referred to as **'Parties')**

WHEREAS the Second Party has agreed to supply, Install, Testing and Commissioning **[Mention Goods]** (hereinafter referred as 'Equipment' to the First Party on the following terms and conditions:

Now this Agreement witnesseth as follows:
The following documents shall be deemed to form and be read and construed as part of this agreement, viz:

a) Form of Contract, Award Letter, Form of Quotation, Bid solicitation Documents, and Terms and Condition of Supply.
b) Addendum (if Applicable);

DEFINITIONS:

a. **'Consideration'** means the price payable to the Second Party by the First Party under this Agreement Deed for the full and proper performance of its contractual obligations.

b. **'Equipment'** means all of the equipment, machinery, and/or other materials which the Second Party is required to supply to the First Party under this Agreement Deed.

c. **'Services'** means those services ancillary to the supply of the Equipment, such as transportation and insurance, and any other incidental services, such as installation, testing, commissioning, provision of technical assistance, training, and other such obligations of the Second Party.

d. **'Project Site'** where applicable, means the place or places named in this Agreement Deed.

e. **'Day'** means a calendar day.

f. **'Corrupt Practice'** means the offering, giving, receiving or soliciting of anything of

value to influence the action of a public official in the procurement process or in contract execution.

g. **'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 Borrower, 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 Borrower of the benefits of free and open competition.

h. **'Force Majeure'** means an event beyond the control of the Parties and not involving the Parties fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the First Party in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

TERMS AND CONDITIONS:

1. Second Party Shall Supply, install, test and commissioning of the Equipment at the premises and precincts of Peshawar Institute of Cardiology on CNF basis.

2. The specification, quality, quantity of goods shall be in conformity to purchase order/Award Letter, which shall be made part of this Agreement Deed. The Second Party shall include the ancillary Services attached with the Equipment.

3. The Equipment supplied under this Agreement Deed shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, it shall conform to the authoritative standards appropriate to the Equipment's country of origin. Such standards shall be the latest issued by the concerned institution.

4. The Second Party shall be required to provide any or all of the following services, including additional services, if any, specified in contract:

    i. performance or supervision of on-site assembly and/or start-up of the supplied Equipment;

    ii. furnishing of tools required for assembly and / or maintenance of the supplied Equipment;

    iii. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Equipment;

    iv. performance or supervision or maintenance and/or repair of the supplied Equipment, for a period of time indicated in purchase order/Award Letter, provided that this service shall not relieve the Second Party of any warranty obligations under this Agreement Deed; and

v. Training of the First Party's personnel, at the Second Party's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

5. The Second Party will be liable to complete the supply within stipulated time limit i.e. 90 days after the confirmation of LC from the respective manufacturer of the Equipment.

6. The Second Party will liable to complete the supply within stipulated time limit by confirming quality, quantity and timeline up to the entire satisfaction of First Party.

7. The Second Party warrants that the Equipment supplied under this Agreement Deed are brand new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in this Agreement Deed. The Second Party further warrants that all Equipment supplied under this Agreement Deed shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the First Party specifications) or from any act or omission of the Second party, that may develop under normal use of the supplied Equipment in the conditions prevailing in the country of First Party.

8. The First Party shall promptly notify the Second Party in writing of any claims arising under this warranty.

9. The First Party, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Second party, may terminate this Agreement Deed in whole or in part:

a. if the Second Party fails to deliver any or all of the Equipment within the period(s) specified in this Agreement Deed, or within any extension thereof granted by the First Party; or

b. if the Second Party fails to perform any other obligation(s) under this Agreement Deed.

c. if the Second Party, in the judgment of the First Party has engaged in corrupt or fraudulent practices in competing for or in executing this Agreement Deed.

10. In case the Second Party failed to complete the supply till the due date i.e. 90 days from confirmation of LC from the respective manufacturer of the Equipment, a penalty as per detail below will be charged from the Second Party;

i. Penalty @ 2% for late supply up to 15 days.
ii. Penalty @ 5% for late supply after 15 days up to 30 days.
iii. Penalty @ 07 % for late supply beyond 30 days

Once the maximum is reached, the First Party may consider termination of the

contract.

11. The Second Party shall be responsible for the transportation of the Equipment and the transportation charges incurred thereof. The Second Party shall complete the supply and installation of goods within the stipulated period as mentioned in the supply order (Imported Items) from the date of execution of this agreement or as extended or reduced by the First Party. In case of failure of Second Party to supply the goods within the stipulated period, the First Party will be at liberty to make an alternate arrangement at the risk and cost of Second Party and the Second Party shall be liable to pay the entire cost/amount to the alternate supplier according to the demand of the First Party. In the event of commuting a default the First Party will be at liberty to take any civil/criminal legal action against the Second Party in accordance with law. A fine up to ten percent (10%) of the Consideration shall also be inflicted against the Second Party.

12. The Second Party shall be responsible for any defect in goods or supply of goods. The entire goods will be free of any charges and encumbrance of what so nature and the First Party or its agent will be authorized at all reasonable time to view, check and examine the conditions of the supplied Equipment.

13. Upon demand made by the First Party at any time or from time to time, to execute all such instruments, deeds or documents which the First Party may in its sole discretion require, the Second Party will do the needful.

14. The First Party will be furnishing all such information as the Second Party may at any time or from time to time required relating to the position of goods and pecuniary liability of the First Party or otherwise whatever.

15. The Second Party shall not, without the prior written consent of First party, disclose this Agreement Deed, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the First Party in connection therewith, to any person other than a person employed by the Second Party in the performance of this Agreement Deed. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

16. The Second Party shall provide such packing of the Equipment as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Agreement Deed. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Equipment's final destination and the absence of heavy handling facilities at all points in transit.

17. The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in

the Agreement Deed, including additional requirements, if any, and in any subsequent instructions ordered by the First Party.

18. The First Party will be at liberty, at all times and shall have the right to return the Equipment, provided/delivered by the Second Party with regard to quality, quantity, value or otherwise fitness for use. Notwithstanding anything contained hereinabove, it is hereby agreed by both Parties that the First Party at all times be at liberty and shall have the right to cancel or reduce the quantity, without assigning any reason.

19. The Second Party shall be bound under this Agreement Deed to provide the warranty, maintenance and services of Equipment which must be seven (----) years with spare parts including accessories from the date of installation. The Second Party shall be bound to keep available the spare parts for 10 years.

20. Post warranty shall be ------ % of the contract value per year, for maintenance contract, including service and parts.

21. The Second Party shall deposit an amount of **10%** of the Consideration as service security, which will be refundable after expiry of the period of warranty/guarantee and services after necessary adjustments.

22. The Second Party shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under this Agreement Deed is the result of an event of Force Majeure.

    If a Force Majeure situation arises, the Second Party shall promptly notify the First Party in writing of such condition and the cause thereof. Unless otherwise directed by the First Party in writing, the second Party shall continue to perform its obligations under this Agreement Deed as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

23. Any notice given by one party to the other pursuant to this Agreement Deed shall be sent to the other party in writing or by cable, telex, or facsimile and confirmed in writing to the other party's address specified in contract.

24. A notice shall be effective when dispatched on the given address of the Parties in this Agreement Deed via above means.

25. Payment to the Second Party shall be on presenting a bill in the shape of summary duly verified by Finance Department. The bill shall be counter verified from the end using department before clearance. Demand in violation of this clause of agreement may lead to imposition of reasonable amount of fine.

26. The Equipment shall be open to inspection at all times during the agreement period. The inspection of Equipment shall be carried out by a representative from purchase, legal, quality control, finance or end using department.

27. Besides the above conditions the Second Party shall be bound to fulfill the defacing if found at any time and for the purpose shall be ready to sign and execute a fresh agreement if needed.

28. Each Clause of this Agreement Deed shall be and remain separate from and independent of and severable from all and any other Clauses herein except where otherwise indicated by the context of this Agreement Deed. The decision or declaration that one or more of the Clauses are null and void shall have no effect on the remaining Clauses of this Agreement Deed.

29. In the event of any difference or dispute arising between the Parties or their representative agents regarding rights and liabilities of the parties or any other matter relating to this Agreement Deed may be referred to the Board of Governors of the First Party and their decision will be final in all aspects and the Second Party warrants to abide by the decision of the Board of Governors of the First Party and will be bound by the decisions.

30. This Agreement Deed may be reviewed at any stage with mutual consultation of both Parties, if required. All amendments or addition to this Agreement Deed must be in writing and signed by both Parties through addendum to this Agreement**.** No amendment of any provision of this Agreement Deed shall be valid unless the same shall be in writing and signed by the Parties

31. The validity, interpretation, construction and performance of this Agreement Deed shall be governed by the Laws of Khyber Pakhtunkhwa in Pakistan. This Agreement Deed shall be interpreted with all necessary changes in gender and in number as the context may require and shall convey to the benefit of and be binding upon the respective successors and assigns of the parties hereto.

IN WITNESS WHEREOF the Parties mentioned above have carefully pursued the terms and condition embodied in this Agreement Deed and have executed the same, setting their signatures below, on the date and place mentioned above.

4. Performance Security Form

To: [name of Procuring agency]

WHEREAS [name of Supplier] (hereinafter called "the Supplier") has undertaken, in pursuance of Contract No. [reference number of the contract] dated _____ 20_____ to supply [description of goods and services] (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Supplier shall furnish you with a bank guarantee by a reputable bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Supplier a guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, 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 Supplier 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.

This guarantee is valid until the _____ day of _____20_____.

Signature and seal of the Guarantors

[name of bank or financial institution]

[Address]

[date]

5. Bank Guarantee for Advance Payment

To: [name of Procuring agency]

[name of Contract]

Gentlemen and/or Ladies:

In accordance with the payment provision included in the Special Conditions of Contract, which amends Clause 16 of the General Conditions of Contract to provide for advance payment, [name and address of Supplier] (hereinafter called "the Supplier") shall deposit with the Procuring agency a bank guarantee to guarantee its proper and faithful performance under the said Clause of the Contract in an amount of [amount of guarantee in figures and words].

We, the [bank or financial institution], as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Procuring agency on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding [amount of guarantee in figures and words].

We further agree that no change or addition to or other modification of the terms of the Contract to be performed thereunder or of any of the Contract documents which may be made between the Procuring agency and the Supplier, 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 remain valid and in full effect from the date of the advance payment received by the Supplier under the Contract until [date].

Yours truly,

Signature and seal of the Guarantors

[name of bank or financial institution]

[Address]

[date]

6. INTEGRITY PACT

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS. 10.00 MILLION OR MORE

Contract No._____ Dated _____Contract Value: [To be filled in at the time of signing of Contract] Contract Title: _____

[name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Khyber Pakhtunkhwa (GoKP) or any administrative subdivision or agency thereof or any other entity owned or controlled by GoKP through any corrupt business practice.

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

[name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoKP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

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

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

Name of Buyer: …… Name of Seller/Supplier: ……

Signature: ……[Seal] Signature: ……{Seal]

The bidders will quote the technical bids on the format/ Form given below.
Technical Bid Quotation (Form):

S.No in SBD	
Name of the Equipment	
Make	
Model	
Country of origin.	
Vis-à-vis (mandatory)	
Hospital Specification	**Quoted Specification of the firm**

BILL OF QUANTITY

SUPPLY, INSTALLATIN, TESTING AND COMMISSIONING OF FIRE FIGHTING SYSTEM FOR PESHAWAR INSTITUTE OF CARDIOLOGY MEDICAL TEACHING INSTITUTION

S.N	Description	Qty	Unit	Unit Price	Total Amount
	Fire Fighting System:				
A	**AUTOMATIC SPRINKLER**				
1	**Supply, Installation, Testing & commissioning of MS Sch.40 Seamless Pipe confirming to ASTM A53 for Fire Fighting System. Pipes shall include Fittings, supports, anchors, rods for all diameters and all accessories necessary to complete the work.(above & below ceiling if required).**				
	i) MS Pipe DN25	30265	Rft		
	ii) MS Pipe DN40	10200	Rft		
	iii) MS Pipe DN50	7020	Rft		
	iv) MS Pipe DN65	3060	Rft		
	iii) MS Pipe DN80	3010	Rft		
	iv) MS Pipe DN100	5580	Rft		
	v) MS Pipe DN150	1420	Rft		
2	**Supply, Installation, Testing & commissioning of Polyethylene Pipes PE100, SDR11, PN16 Including Fittings (Electro Fusion Type), cutting, scrapping & cleaning as per standard requirement of Electrofusion fittings installation with PE PN16 Pipe.**				
	i) HDPE Pipe DN110	248	Rft		
	ii)HDPE Pipe DN160	2775	Rft		
	Construction of underground Isolation Valve Pit 4' x 4' x 4' including slab with man hole cover.				
	i) 4ft x 4ft x 4ft pit	8	Job.		
3	**Supply, Installation, Testing & commissioning of Stainless Steel (SS316) Pipe confirming to Sch.10 seamless (working pressure 10 Bar), for low pressure water mist System. Pipes shall include Stainless Steel Fittings, supports, anchors, rods for all diameters and all accessories necessary to complete the work.**				
	i) Stainless Steel (SS316) Pipe DN20	1692	Rft		
	ii) Stainless Steel (SS316) Pipe DN25	1245	Rft		

	iii) Stainless Steel (SS316) Pipe DN40	1485	Rft		
	iv) Stainless Steel (SS316) Pipe DN50	1595	Rft		
4	**Supply, Installation, Testing & commissioning of Stainless Steel (SS316) Micro Strainer with supervisory switches and all accessories necessary to complete the work. Make: Europe/USA/Turkey**				
	i) Micro Strainer DN40	6	Nos.		
	ii) Micro Strainer DN50	11	Nos.		
5	**Supply, Installation, testing & commissioning of Stainless Steel (SS316) Butterfly Valve Wafer Type with Supervisory switches. Make: Europe/USA/Turkey**				
	i) Butterfly Valve DN50	14	Nos.		
	ii) Butterfly Valve DN40	33	Nos.		
	iii) Butterfly Valve DN25	24	Nos.		
5	**Supply, Installation, testing & commissioning of Water Flow Supervisory Switch, Make: Europe/USA/Turkey**				
	i) Water Flow Switch DN50	14	Nos.		
	ii) Water Flow Switch DN40	33	Nos.		
	iii) Water Flow Switch DN25	24	Nos.		
	Supply, Installation, testing & commissioning of Low Pressure Water Mist Nozzle complete with all fittings. Make: Europe/USA/Turkey				
	i) Water Mist Nozzle 1/2" SS316, OH Series, K-factor: 14.5 (l/min/√bar) Working Pressure: 6 bar – 16 bar, UL/FM/VDS Approved.	206	Nos.		
6	**Supply, Installation, testing & commissioning of Automatic Air Vent Valve threaded type. Make: Europe/USA/Turkey/ UAE**				
	i) Automatic Air vent Valve, 1"	2	Nos.		
7	**Supply, Installation, testing & commissioning of Test and Drain valve assembly, Make: Europe/USA/Turkey/ UAE**				
	i) Test and Drain valve assembly, 1"	12	Nos.		
8	**Supply, Installation, testing & commissioning of Quick Response type Automatic Fire Sprinkler UL/FM Approved as per as per**				

	NFPA13 requirements, Make: Europe/USA/Turkey/ UAE				
	Sprinkler Head 68 Deg. Pendent, 1/2" NPT, Brass Finish, Quick Response, UL/ULC/FM Approved,	2338	Nos		
	Sprinkler Head 68 Deg. Upright , 1/2" NPT, Brass Finish, Quick Response, UL/ULC/FM Approved, (above false celling)	2111	Nos		
	ii) Quick response Upright type K factor 5.6	348	Nos.		
	Sprinkler Head 68 Deg. Side wall 1/2" NPT, Brass Finish, Quick Response, UL/FM Approved,	74	Nos		
9	**Supply, Installation, testing & commissioning of Alarm Check Valve Flanged with all Standard Accessories, UL Listed / FM Approved.** **Make: Europe/USA/Turkey/ UAE**				
	i) Alarm Check Valve DN150	1	Nos.		
10	**Supply, Installation, testing & commissioning of Zone Control Valve Assembly Complete as per NFPA-13 requirements.** **Make: Europe/USA/Turkey/ UAE**				
	4" Zone Control Valve Assembly including : 4" Butterfly Valve with Tamper switch UL/FM Approved 4" Non Return Valve (Check Valve) UL/FM Approved 4" Dia Flow Switch UL/FM Approved Pressure gauge UL Listed Test & Drain Control Valve Dia 1" UL/FM Approved	12	Nos.		
	6" Zone Control Valve Assembly including : 6" Butterfly Valve with Tamper switch UL/FM Approved 6" Non Return Valve (Check Valve) UL/FM Approved 6" Dia Flow Switch UL/FM Approved Pressure gauge UL Listed Test & Drain Control Valve Dia 1" UL/FM Approved	12	Nos.		

11	**Supply, Installation, testing & commissioning of Wet Pillar Type Fire Hydrants with 2 x 2-1/2" Oblique Type Landing Valve (Kite mark Approved) Inlet 4" Flange Connection complete with Inlet Control Isolation Valve. Make: Europe/USA/Turkey/ UAE**				
	i) Wet Pillar Fire Hydrant 4", DN100	9	Nos.		
	ii) OS&Y Gate Valve flangded DN100, WP 300	9	Nos.		
12	**Supply, Installation, testing & commissioning of Fire Hose Cabinet (FHC) made of steel 16 SWG complete with glass,2.5 inch landing valve with built in PRV KITEMARK 2.5" Dia Synthetic Type Hose pipe up to 100 ft long (UL Listed/BSI) working pressure 8 to 25 bar, 2.5" dia Triple Purpose Nozzle (UL Listed/BSI),), coupling and adopter. Make: Europe/USA/Turkey/ UAE**				
	i) Fire Hose Cabinet (Outdoor)	9	Nos.		
13	**Supply, Installation, testing & commissioning of Double Compartment Horizontal Fire Hose Reel Cabinet (FHRC) made of steel 16 SWG complete with glass, 1" Dia Hose Reel Automatic swing type 100 feet long working pressure 12 bar & burst pressure 18 bar including 1" LOCK SHIELD Valve, GATE VALVE 1'' & Nozzle, Kite mark approved and accommodate to 1x DCP 6 kg /CO2 5 kg / Type Portable Fire Extinguisher. Make: Europe/USA/Turkey/ UAE**				
	i) Fire Hose Reel Cabinet (Indoor) complete with all accessories.	34	Nos.		
14	**Supply, Installation, testing & commissioning of Valve Breeching Inlet 2 Way with Flanged outlet. Complete as per NFPA-13 requirements BSI/KITEMARK/LPCB Approved. Make: Europe/USA/Turkey/ UAE**				
	i) 2-1/2 in x 2 WAY in Fire Department connection	2	Nos.		
	ii) CHECK Valve DN100 WP 300 PSI	2	Nos.		
15	**Supply, Installation, testing & commissioning of Fire Fighting Pumps, Vertical Type confirming to NFPA 20 Standard with IP 54 Type Motor enclosure including Air Release Valve, Casing Relief Valve, Suction & Discharge Pressure Gauge, Discharge Valves & Accessories, Electric Control Panel (UL/FM) all**				

	fittings and fixing accessories complete in all respects, UL/FM Approved. Make: Europe/USA/Turkey/ UAE				
	i) Electric Motor Driven Vertical Turbine Type including shaft Main Pump with capacity of 1000 USGPM @ 100 Meter Head (12 Bar).	1	Nos.		
	ii) Diesel Engine Driven Vertical Turbine Type including shaft & Gear Standby Pump with capacity of 1000 USGPM @ 100 Meter Head (12 Bar).	1	Nos.		
	iii) Electric Driven Jockey Fire Pump Vertical Multi Stage Type with Capacity of 25 US GPM @ 100 Meter Head (12 Bar).	1	Nos.		
16	**Supply, Installation, testing & commissioning of OS&Y Type Gate Valves Flanged PN16 UL Listed & FM Approved. Make: Europe/USA/Turkey/ UAE**				
	i) Gate Valve DN65	1	Nos.		
	iii) Gate Valve DN100	1	Nos.		
	iv) Gate Valve DN150	4	Nos.		
17	**6- Supply, Installation, testing & commissioning of Non Return Valve (Check Valve) UL Listed & FM Approved Make: Europe/USA/Turkey/ UAE**				
	i) Check Valve DN150	2	Nos.		
	ii) Check Valve DN65	1	Nos.		
18	**7- Supply, Installation, testing & commissioning of Pressure Relief Valve Flange Type UL Listed. Make: Europe/USA/Turkey/ UAE**				
	i) Pressure Relief Valve DN150	1	Nos.		
20	**Supply, Installation, testing & commissioning of Fire Extinguishers Make: Europe/USA/Turkey/ UAE**				
i	Portable Fire Extinguisher Non-Magnetic, Water Mist type, Capacity 6 Liters.	1	Nos.		
ii	Portable Fire Extinguisher CO2 type, 5 Kg Capacity(BSI/KITEMARK Approved)	114	Nos.		
iii	Portable Fire Extinguisher DCP type, 6 Kg Capacity BSI/KITEMARK Approved)	114	Nos.		
iv	Portable Fire Extinguisher 06 kg/ HFC 227ea	61	Nos.		

v	Portable Fire Extinguisher Wet Chemical type, Capacity 9 Liters	4	Nos.		
vi	Trolley mounted Fire Extinguisher CO2 type, Capacity 45 Kgs	2	Nos.		
vii	Trolley mounted Fire Extinguisher DCP type, Capacity 50 Kgs	2	Nos.		
				Sub Total (A)	
B	**FM200 System:**				
	Supply, Installation, testing & commissioning of Clean Agent FM-200 Fire Suppression System UL Listed & FM Approved for IT Rooms & Electrical Rooms as following below: Make: Europe/USA/Turkey/UAE				
	Basement Floor				
i	Clean Agent FM-200 Fire Suppression System for **Medical Gases Room** including 153 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) **UL Listed** Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be **UL Listed & FM Approved /(BSI/KITEMARK/LPCB)**	1	Set		
ii	Clean Agent FM-200 Fire Suppression System for **Sub Main Panel 1** including 44 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
iii	Clean Agent FM-200 Fire Suppression System for **Sub Main Panel 2** including 61 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40				

	seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)				
iv	Clean Agent FM-200 Fire Suppression System for **UPS Room** including 27 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
v	Clean Agent FM-200 Fire Suppression System for **Electric Room-1** including 27 Liters Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
vi	Clean Agent FM-200 Fire Suppression System for **Electric Room-2** including 44 Liters Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
vii	Clean Agent FM-200 Fire Suppression System for **Electric Room-3** including 8.5 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports	1	Set		

	system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)				
viii	Clean Agent FM-200 Fire Suppression System for **Electric Room-4** including 8.5 Liters Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
ix	Clean Agent FM-200 Fire Suppression System for **UPS/Machine Room** including 27 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
	First Floor				
x	Clean Agent FM-200 Fire Suppression System for **UPS/Machine Room-1** including 15 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		

xi	Clean Agent FM-200 Fire Suppression System for **UPS/Machine Room-2** including 27 Liters Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
xii	Clean Agent FM-200 Fire Suppression System for **UPS/Machine Room-3** including 27 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
xiii	Clean Agent FM-200 Fire Suppression System for **UPS/Machine Room-4** including 44 Liters Impulse Valve Storage Container manufactured in accordance with U.S. Department of Transportation (DOT) and filled with 41 Kgs. of FM-200 Agent with all accessories (Impulse Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). All components shall be UL Listed & FM Approved.	1	Set		
xiv	Clean Agent FM-200 Fire Suppression System for **UPS/Machine Room-5** including 44 Liters Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		

xv	Clean Agent FM-200 Fire Suppression System for **UPS/Machine Room-6** including 44 Liters Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
	Second Floor				
xvi	Clean Agent FM-200 Fire Suppression System for **Server Room** including 61 Liters Impulse Valve Storage Container manufactured in accordance with U.S. Department of Transportation (DOT) and filled with 64 Kgs. of FM-200 Agent with all accessories (Impulse Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). All components shall be UL Listed & FM Approved.	1	Set		
xvii	Clean Agent FM-200 Fire Suppression System for **Sub Station 1** in including 153 Liters Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
xviii	Clean Agent FM-200 Fire Suppression System for **Sub Station 2** including 61 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM	1	Set		

	Approved /(BSI/KITEMARK/LPCB)				
xix	Clean Agent FM-200 Fire Suppression System for **Metering Room** including 44 Liters Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB)	1	Set		
xviii	Clean Agent FM-200 Fire Suppression System for **HT/VBC** including 61 Liters which includes Electric and Manual Actuator and filled with 24 Kgs.of FM-200 (HFC227 EA) UL Listed Agent with all accessories (Impulse / discharge Valve Electric and Manual Actuator, Low Pressure Switch, Discharge Pressure Switch, Liquid Level Indicator, Cylinder Brackets & Discharge Nozzles and Sch.40 seamless Piping network, fittings, supports system as per standard NFPA2001 requirements). shall be UL Listed & FM Approved /(BSI/KITEMARK/LPCB).	1	Set		
				Sub Total (B)	
C	**FIRE DETECTION & ALARM SYSTEM Make: Europe/USA/Turkey/UAE**				
i	**Multiple Sensor Detector (Smoke + Heat)**				
	Supply, Installation, Testing Commissioning of Addressable Photoelectric Multi detector with multiple sensitivity(adjustable at site) levels, programmable for time automatic sensitivity selection with base, Junction box and other accessories as required and Detectors EN54-7 EN54-5 shall be UL/FM/VDS/LPCB APPROVED	1543	Nos.		
	Supply, Installation, Testing Commissioning of Addressable Photoelectric smoke detector with REMOTE INDICATOR(adjustable at site) levels, programmable for time automatic sensitivity selection with base, Junction box and other accessories as required and Detectors shall be **UL/FM/VDS/LPCB APPROVED**	1543	NOS		
ii	**Beam Detectors**				
	Supply, Installation, testing & commissioning of addressable Beam detectors complete as	2	Nos.		-

	per NFPA requirement and confirming to EN-54 .				
iii	**SOUNDER WITH FLASHER**				
	Supply, Installation, Testing, Commissioning of Flasher light. The Flasher shall be of wall mounted type. The rate 5hall include for mounting accessories, etc. (Included in Sounder/ Hooter) EN54-3 & EN54 PART 23 APPROVED, BUILT IN SHORT CIRCUIT ISSOLATOR & EN54-17 CERTIFIED UL/FM/VDS/LPCB /BSI/KITEMARK APPROVED	80	NOS		-
iv	**Manual Call Points**				
	Supply, Installation, testing & commissioning of Break Glass Type Addressable Manual call point, IP 24 complete with all accessories as per NFPA requirement and confirming to EN-54. UL/FM or VdS /BSI/KITEMARK	80	Nos.		-
ix	**Releasing Module**				
	Supply, Installation, testing & commissioning of Releasing Module for FM200 Fire Suppression Agent Release complete with all accessories as per NFPA requirement and confirming to EN-54. UL/FM or VdS /BSI/KITEMARK)	14	Nos.		-
ix	**Input/output Module**				
	Supply, Installation, testing & commissioning of Input/output Module; 04 Inputs & 02 Outputs complete with all accessories as per NFPA requirement and confirming to EN-54. UL/FM or VdS Approved/BSI/KITEMARK)	22	Nos.		-
ix	**Monitoring Module**				
	Supply, Installation, testing & commissioning of Monitoring Module for Fire Pumps Monitoring & Water Mist System Flow Switch and Valves Monitoring complete with all accessories as per NFPA requirement and confirming to EN-54. UL/FM or VdS Approved/BSI/KITEMARK)	59	Nos.		-
ix	**Aspirating Smoke Detector**				
	Supply, Installation, testing & commissioning of Aspirating Smoke Detector with min 75 Meters Pipe length and 12 Sampling points including module for connection to X-Line complete with piping and all accessories as per NFPA requirement and confirming to EN-54. UL/FM or VdS Approved (BSI/KITEMARK)	25	Nos.		
x	**FIRE ALARM CONTROL PANEL**				

	Supplying, installing, testing and commissioning of addressable Fire alarm panel Loops as system required , complete as per drawing EN 54 PART3 & 4 COMPLIANVE CERTIFIED, 3D GRAPHICAL PACKAGE 32 BIT MICRO PROCESSOR , INTEGRATION WITH BMS AND OTHER SYSTEMS BSI-KITEMARKED / LPCB/ UL/FM/VDS	2	NOS		
	Wiring with Fire Resistance Cable 2 core, 1.5mm2 UL Listed/LPCB Approved for Fire Alarm & Detection System, supervision of Fire Pumps, Dampers, Water Mist Zones & Clean Agent Suppression Zones as per standard	1	Job		
	Conduit (Metal) 3/4" Dia with fixing accessories for Fire Alarm & Detection System, supervision of Fire Pumps, Dampers, Water Mist Zones & Clean Agent Suppression Zones as per standard	1	Job		
	Fire Compartment at Each floor				
	Detail Attached in Sheet # 2				
	5. PPE Cabinet near the stairs/Elevators at Each Floor Double Compartment				
	Fire Man Suit	20	Each		
	Goggles	20	Each		
	Gloves	20	Each		
	Helmet	20	Each		
	Fire Blankets	20	Each		
	Hammer	20	Each		
	safety belt harness	20	Each		
	EGRESS PLAN & EMERGENCY EXIT SIGNAGE ADDRESSABLE MONITORING SYSTEM - UL / FM /VDS/LPCB				
	i) Fire Signage (Building)				
	Central Monitoring Panel (AC100-240V / 10W 1.4Ah/12V*2 3 Hours CAN bus 0.18A 50/60Hz) AC Power 10W ,Emergency Duration 3 HR	1	Nos.		

	Emergency Light, addressable, surface-mounted monitored, self-contained (AC120V/0.05A or AC277/0.025A 50/60Hz) , Emergency Duration 3 HRS, 5.5W	1,769	Nos.		
	Interface (AC120V/0.035A or AC277/0.016A 50/60Hz) Emergency Duration 3 HRS	10	Nos.		
	Exit Light, addressable, surface-mounted monitored, self-contained (AC120V/0.035A or AC277/0.016A 50/60Hz) Emergency Duration 3 HRS) , 5.5W	40	Nos.		
	Exit Light, addressable, recessed type monitored, self-contained(AC120V/0.038A or AC277/0.018A 50/60Hz) , 3.5 W, Emergency duration 3 hrs.	102	Nos.		
	2C*2.5 MM 2 FIRE RATED CABLE in rft LPCB /UL RFT	1	Job		
	Supply, installation in position of the signage fire assembly point signage at each floor, indicating the direction of fire assembly point (in case of fire) lettering size shall be 7.5cm with contrasting color from back ground. Size shall be 9" height x 9" width & as per BS 5499 code requirement.	34	No		-
	v) Prohibition signage				
	Supply, installation in position of the Prohibition signage at each floor, indicating Prohibition sign (in case of fire) UV printing, lettering size shall be 7.5 cm with contrasting color from back ground. Size shall be 9" height x 9" width .	50	Nos.		-
	vi) Stairs identification signage				
	Signage with printed "IN CASE OF FIRE, USE STAIRS UNLESS INSTRUCTED OTHER WISE" of 11.5 cm height letters in red with white back ground. Thel size of the board shall be 18"x 18" and shall be fixed at the height of 2 mtrs from finished floor near Manual call point .	40	Nos.		
				Sub Total (C)	
D	**Fire Doors**				
A	**1a-Fire Rated Door Single Leaf (120 Min fire ratting)**				

	Supply and installation of Door single leaf (5'-0"X 7'-0") shall be leaf thickness 46mm fully flush double skin door with vision lite 120 minutes' fire rating. Door leaf shall be manufactured from 1.2mm (18guage) minimum thick galvanized steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall bel resin bonded honeycomb core. All doors shall be factory prepared for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers. The edges should be interlocked with a bending radius of 1.4mm. For pair of doors astragals has to be provided on the meeting stile for both active and inactive leaf. Vision lite wherever applicable should be provided as per manufacturers recommendation with a beading and screws from inside. Including all relevant hardware BB- Hinges, Door Closer , Panic Bar External trim, door exit sign as per NFPA / EN Standard requirement. **Make: Europe/USA/Turkey/UAE**	12	Nos.		
	1b)-Fire Rated Door Frame (120 Min fire rating)				
	Supply and installation of Door frame shall be double rebate profile of size (As per above door size) made out of 1.60mm (16gauge) minimum thick galvanized steel sheet. Frames shall be Mitered and field assembled with self-tabs. All provision should be mortised, drilled and tapped for receiving appropriate hardware, Rubber door silencers should be provided on the striking jamb. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening. Once frame installed should be grouted with cement & sand slurry necessary for fire doors on the clear masonry opening. Make: Europe/USA/Turkey/UAE	12	Nos.		
2	**2a-Fire Rated Door Single Leaf (120 Min fire ratting)**				

	Supply and installation of Door single leaf (3'-0"X 7'-0") shall be leaf thickness 46mm fully flush double skin door with vision lite 120 minutes' fire rating. Door leaf shall be manufactured from 1.2mm (18guage) minimum thick galvanized steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall bel resin bonded honeycomb core. All doors shall be factory prepared for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers. The edges should be interlocked with a bending radius of 1.4mm. For pair of doors astragals has to be provided on the meeting stile for both active and inactive leaf. Vision lite wherever applicable should be provided as per manufacturers recommendation with a beading and screws from inside. Including all relevant hardware BB- Hinges, Door Closer , Panic Bar External trim, door exit sign as per NFPA / EN Standard requirement. Make: Europe/USA/Turkey/UAE	20	Nos.		
	2b)-Fire Rated Door Frame (120 Min fire rating)				
	Supply and installation of Door frame shall be double rebate profile of size (As per above door size) made out of 1.60mm (16gauge) minimum thick galvanized steel sheet. Frames shall be Mitered and field assembled with self-tabs. All provision should be mortised, drilled and tapped for receiving appropriate hardware, Rubber door silencers should be provided on the striking jamb. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening. Once frame installed should be grouted with cement & sand slurry necessary for fire doors on the clear masonry opening. Make: Europe/USA/Turkey/UAE	20	Nos.		
3	**3a-Fire Rated Door Single Leaf (120 Min fire ratting)**				

	Supply and installation of Door single leaf (4'-0"X 7'-0") shall be leaf thickness 46mm fully flush double skin door with vision lite 120 minutes' fire rating. Door leaf shall be manufactured from 1.2mm (18guage) minimum thick galvanized steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall bel resin bonded honeycomb core. All doors shall be factory prepared for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers. The edges should be interlocked with a bending radius of 1.4mm. For pair of doors astragals has to be provided on the meeting stile for both active and inactive leaf. Vision lite wherever applicable should be provided as per manufacturers recommendation with a beading and screws from inside. Including all relevant hardware BB- Hinges, Door Closer , Panic Bar External trim, door exit sign as per NFPA / EN Standard requirement. Make: Europe/USA/Turkey/UAE	50	Nos.		
	3b)-Fire Rated Door Frame (120 Min fire rating)				
	Supply and installation of Door frame shall be double rebate profile of size (As per above door size) made out of 1.60mm (16gauge) minimum thick galvanized steel sheet. Frames shall be Mitered and field assembled with self-tabs. All provision should be mortised, drilled and tapped for receiving appropriate hardware, Rubber door silencers should be provided on the striking jamb. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening. Once frame installed should be grouted with cement & sand slurry necessary for fire doors on the clear masonry opening. Make: Europe/USA/Turkey/UAE	50	Nos.		
4	**4a-Fire Rated Door Double Leaf (120 Min fire ratting)**				

	Supply and installation of Door Double leaf (8'-0"X 7'-0") shall be leaf thickness 46mm fully flush double skin door with vision lite 120 minutes' fire rating. Door leaf shall be manufactured from 1.2mm (18guage) minimum thick galvanized steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall bel resin bonded honeycomb core. All doors shall be factory prepared for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers. The edges should be interlocked with a bending radius of 1.4mm. For pair of doors astragals has to be provided on the meeting stile for both active and inactive leaf. Vision lite wherever applicable should be provided as per manufacturers recommendation with a beading and screws from inside. Including all relevant hardware BB- Hinges, Door Closer, Panic Bar External trim, door exit sign as per NFPA / EN Standard requirement. Make: Europe/USA/Turkey/UAE	25	Nos.		
	4b)-Fire Rated Door Frame (120 Min fire rating)				
	Supply and installation of Door frame shall be double rebate profile of size (as per above double leaf door) made out of 1.60mm (16gauge) minimum thick galvanized steel sheet. Frames shall be Mitered and field assembled with self-tabs. All provision should be mortised, drilled and tapped for receiving appropriate hardware, Rubber door silencers should be provided on the striking jamb. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening. Once frame installed should be grouted with cement & sand slurry necessary for fire doors on the clear masonry opening. Make: Europe/USA/Turkey/UAE	25	Nos.		
5	**5a-Fire Rated Door Double Leaf (120 Min fire ratting)**				

	Supply and installation of Door Double leaf (6'-0"X 7'-0") shall be leaf thickness 46mm fully flush double skin door with vision lite 120 minutes' fire rating. Door leaf shall be manufactured from 1.2mm (18guage) minimum thick galvanized steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall bel resin bonded honeycomb core. All doors shall be factory prepared for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers. The edges should be interlocked with a bending radius of 1.4mm. For pair of doors astragals has to be provided on the meeting stile for both active and inactive leaf. Vision lite wherever applicable should be provided as per manufacturers recommendation with a beading and screws from inside. Including all relevant hardware BB- Hinges, Door Closer, Panic Bar External trim, door exit sign as per NFPA / EN Standard requirement. Make: Europe/USA/Turkey/UAE	6	Nos.		
	5b)-Fire Rated Door Frame (120 Min fire rating)				
	Supply and installation of Door frame shall be double rebate profile of size (as per above double leaf door) made out of 1.60mm (16gauge) minimum thick galvanized steel sheet. Frames shall be Mitered and field assembled with self-tabs. All provision should be mortised, drilled and tapped for receiving appropriate hardware, Rubber door silencers should be provided on the striking jamb. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening. Once frame installed should be grouted with cement & sand slurry necessary for fire doors on the clear masonry opening. Make: Europe/USA/Turkey/UAE	6	Nos.		
	SMOKE EXTRACTION SYSTEM				
	Smoke Extraction Control Unit with Cybercast UL/FM Approved complete with fans, extraction & pressurization including Fire & Smoke Damper and integration with smoke extraction control panels. UL Listed & FM Approved /LPCB	4	Job		

	Make:Europe/USA/Turkey/USA/ UAE				
b	**PROTECTION OF HVAC SYSTEM (DUCTS/SHAFTS)**				
	HVAC Shut Down through Fire alarm control Panel complete in all respect	1	Job		
c	**NON SLIPERY TAPE ON STAIRS STEP**	5000	Meter		
d	**Rescue Shoot as per requirement**				-
	First Floor 20-30 Feet	4	Each		
	Second Floor 30-40 Feet	4	Each		
	Third Floor 40-50 Feet	4	Each		
	Fourth Floor 50-60 Feet	4	Each		
	Laundry 60-70 Feet	1	Each		
	HVAC 60-70 Feet	1	Each		
e	**Rescue Rope 100 Mtrs**	5	Mtr		
f	**Emergency Stretchers Light Weight**	100	Each		
g	**Baby Harness**	100	Each		
	-				
				Sub Total (D)	
				GRAND TOTAL (A+B+C+D)	

Fire Compartments					
Sr. No	**Basement**	**1st Floor**	**2nd Floor**	**3rd Floor**	**4th Floor**
Area	**None**	**Recovery Room**	**Corridor**	**Corridor**	**Corridor**
Dimensions		23'x22	90'x6.75'	90'x6.75'	90'x6.75'