GOVERNMENT OF ANDHRA PRADESH

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Web Site: www.tender.apeprocurement.gov.in

Procurement and supply of certain training Aids/Firefighting Equipment/Systems to A.P. State Disaster Response and Fire Services department under the 15th Finance Commission

Tender Notice No. : 1.5/APMSIDC/2026-27, Dated: 20.07.2026

Name of the Work : Procurement and supply of certain training Aids/Firefighting Equipment/Systems to A.P. State Disaster Response and Fire Services department under the 15th Finance Commission

Name of the Agency and Address : .....

.....

.....

Tender Inviting Agency/Implementing Agency:

Andhra Pradesh Medical Services & Infrastructure Development Corporation (APMSIDC) Department of Health, Medical & Family Welfare Government of Andhra Pradesh

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INTRODUCTION

Disclaimer

Andhra Pradesh Medical Services & Infrastructure Development Corporation (APMSIDC) on behalf of "Director General State Disaster Response and Fire Services, Vijayawada, Government of Andhra Pradesh" shall be Procurement of certain Personnel protective equipment in Andhra Pradesh."

The information contained in this Request for Proposal (RFP) document or subsequently provided to bidders whether verbally or in documentary form by or on behalf of APMSIDC, Department of Health, Medical & Family Welfare, Government of Andhra Pradesh, or any of their employees or advisors, is provided to bidders on the terms and conditions set out in this RFP document and any other terms and conditions subject to which such information is provided.

This RFP document is not an agreement and is not an offer or invitation by APMSIDC, Department of Health, Medical & Family Welfare or its representatives to any other party. The purpose of this RFP document is to provide interested parties with information to assist the formulation of their proposal. This RFP document does not purport to contain all the information each applicant may require.

This RFP document may not be appropriate for all persons, and it is not possible for APMSIDC, Department of Health, Medical & Family Welfare, their employees or advisors to consider the investment objectives, financial situation and particular needs of each entity/bidder who reads or uses this RFP document. Certain bidders may have a better knowledge of the proposed project than others. Each applicant should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP document and obtain independent advice from appropriate sources. APMSIDC, their employees and advisors make no representation or warranty and shall not incur any liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this RFP document. APMSIDC may, in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP document.

SECTION - I: INVITATION FOR BIDS (IFB)

Tender Notice No. 1.5/APMSIDC/2026-27, Dated: 20.07.2026

1. **Andhra Pradesh Medical Services and Infrastructure Corporation on behalf of A.P. State Disaster Response and Fire Services Department is inviting bids to Procurement of certain Training Aids & Equipment and Rescue Equipment to A.P state Disaster Response and Fire Services Department**.

2. Bids are invited on the e-procurement platform for Procurement of certain Training Aids & Equipment and Rescue Equipment to A.P state Disaster Response and Fire Services Department as described in the Section V- Schedule of Requirements from the eligible bidders. The details of bidding conditions and other terms can be downloaded from the electronic procurement platform of Government of Andhra Pradesh i.e. www.tender.apeprocurement.gov.in

3. Bidders would be required to register on the e-Procurement market place "www.tender.apeprocurement.gov.in" and submit their bids online. On registration with the e-Procurement market place they will be provided with a user id and password by the system through which they can submit their bids online.

4. The bidders need to scan and upload the required documents as per the Check list given in Section XIII. Such uploaded documents pertaining to technical bid need to be attached to the tender while submitting the bids on line. The attested copies of all these uploaded documents of technical bid, signed undertaking of tenderer should be submitted off line to Managing Director, APMSIDC, Mangalagiri on or before the next day of the last date of submission of bids. The Corporation will consider only the bids submitted through on-line over the copies of the paper-based bids.

5.
   a) The participating bidder/s will have to pay tender processing fee (non-refundable) for the amounts specified in the Schedule of Requirements (Section –V)

   b) Further the bidder/s shall furnish, as part of it bid, the Bid security for the amounts specified in the Schedule of Requirements (Section –V) to be paid in the form of an unconditional and irrevocable Bank Guarantee issued by any Scheduled Commercial bank in the standard format as shown in the Tender Schedule or a crossed Demand Draft drawn in favour of Managing Director, APMSIDC, Mangalagiri along with bids. The bidders should note that the MSME units are exempted from payment of E.M.D, subject to the production of necessary documentation to that extent by them.

   c) Further all the participating bidders have to electronically pay a non-refundable transaction fee to M/s. APTS, the service provider through "Payment Gateway Service on E-Procurement platform", as per the Government Orders placed on the e-procurement website.
   d) APMSIDC will not accept the tenders from blacklisted companies or undependable Suppliers whose past performance with APMSIDC was found poor due to delayed and/or erratic supplies and those with frequent product failures, and also against whom there have been adverse reports of Sub-Standard Quality / Poor Service of

Procurement of certain Personnel protective equipment or similar type of items, as defined in the other parts of the Bidding document.

6. **Period of Delivery:**

S. No	Description	Delivery Schedule
1	Training Aids & Equipment and Rescue Equipment	Within 90 days to destination from the date of Agreement.

Time Limits prescribed

Sl. No	Activity	Time Limit
1	Comprehensive warranty period	Minimum of two years warranty. The warranty of one year shall be from the date of delivery of last lot.
2	Frequency of visits to vehicles during Warranty	To attend any time for repairs/break down calls.
3	Submission of Performance Security and entering into contract	15 days from the date of issuance of Supply Order
4	Payment Installments	Two Installments and in the ratio 90:10
5	Time for making payments by Purchaser	90% of the invoice amount within 90 days from the date of submission of proper documents
6	Maximum time to attend any Repair call	Within 72 hours
7	Contract period	two years from the receipt of equipment to the client location

7. Bidders eligibility and qualifications: Defined at Clause 13 of Instructions to Bidders (Section II) and Qualification Criteria (Section-VI)

8. **Details of Tender Process:**

1	Downloading of documents	From 28-09-2026 to 19-10-2026 up to 02.55 P.M
2	Pre bid Meeting	01-10-2026 @ 11.00 A.M O/o. APMSIDC, 2nd Floor, IT Park, Mangalagiri, Guntur 522503
3	Due date for Receipt of tenders	19-10-2026 up to 03.00 P.M
4	Time and date of opening of technical bids	19-10-2026 @ 03.01 PM
5	Time and date of opening of financial bids	Will be intimated later

Note: The dates stipulated above are firm and under no circumstances they will be relaxed unless otherwise extended by an official notification or happen to be Public Holidays. For the assistance in the online submission issues, the bidder may contact the help desk of M/s APTS Ltd. (e-procurement) at their e-mail address: eprocsupport-apts@ap.gov.in or on the mobile nos. **+91 9154383633, 9154383634, 7337318402, 7337318403**

9. Procedure for Bid Submission

a. The Tenderers/Bidders who are desirous of participating in e-procurement shall submit their Technical bids, price bids etc., in the Standard formats prescribed in the Tender documents, displayed at e-procurement market place.

b. The bidders shall sign on all the statements, documents, certificates, uploaded by them, owning responsibility for their correctness / authenticity.

c. No hard copies of the bid are required to be submitted.

d. The Corporation shall not hold any risk on account of postal delay. Similarly, if any of the certificates, documents, etc., furnished by the tenderer are found to be false / fabricated / bogus, the bidder will be disqualified, blacklisted, action will be initiated as deemed fit and the EMD will be forfeited.

e. The Corporation will not hold any risk and responsibility for the loss in transit during uploading of the scanned document, for the invisibility of the scanned document online, and any other problem(s) encountered by the Tenderers while submitting his bids online.

10. Important Instructions to the Bidders:

10.1 Quality of Procurement of certain Training Aids & Equipment and Rescue Equipment throughout its life cycle period, timely supplies and prompt maintenance support during the warranty without default are being given paramount importance by the Corporation. The Corporation will be dealing with the defaulters with firm hand, which may lead to blacklisting for a specified period in addition to levying penalties.

10.2 In case of complaints on the quality and poor maintenance support of the supplied Procurement of certain Personnel protective equipment, the supplier shall rectify the defect free of cost during the Contract Period.

10.3 The decision of the Managing Director, APMSIDC, or the Director General, State Disaster Response and Fire Services or any officer authorized by him in respect of the quality of the supplied Procurement of certain Training Aids & Equipment and Rescue Equipment and other goods etc., shall be final and binding.

10.4 No claims shall be allowed against the APMSIDC in respect of interest on Earnest Money Deposit or on Security Deposit or late payments.

10.5 Savings Clause: No suit, prosecution or any legal proceedings shall lie against APMSIDC or any person for anything, which is done in good faith or intended to be done in pursuance of bid.

SECTION - II: INSTRUCTIONS TO BIDDERS

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14	Documents establishing goods, eligibility & conformity to bid documents.	30	Award criteria
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17	Format & signing of Bid Bids.	33	Notification of award
		34	Signing of contract
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		36	Fraud and Corruption

A. Introduction

1. Source of funds:

The funds are made available by the State Government of Andhra Pradesh, towards the procurement processed under this tender notification.

2. Eligible Bidder

This invitation for Bids is open to all Companies who fulfill the eligibility criteria mentioned in the Clause 13 and who meet qualification criteria mentioned in the Section VI.

3. Eligible Bidders

All equipment to be supplied under the contract shall meet the requirements as specified in the Technical Specifications and meet the eligibility criteria as given at Clause 14 of ITB.

4. Cost of bidding.

The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Managing Director, APMSIDC, Mangalagiri here in after referred to as "the purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

B. The Bidding Documents

5. Content of Bidding Documents

5.1 In addition to the Invitation for Bids, the bidding documents include:

(a) Instruction to Bidders;
(b) General conditions of contract;
(c) Special conditions of contract;
(d) Schedule of requirements;
(e) Technical specifications;
(f) Bid form and price schedules;
(g) Bid security form;
(h) Performance security form.
(i) Firm Registration/manufacturer license
(j) Performance statement form.
(k) Declaration Form
(l) Check List of the documents uploaded on e-platform as part of the bid

5.2 The bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the bidder’s risk and may result in rejection of its bid.

6. Clarification of bidding documents

A prospective Bidder requiring any clarification of the bidding documents may notify the purchaser in writing at the purchasers mailing address indicated in the Invitation for Bids. The purchaser will respond in writing to any request for clarification of the Bidding documents if the same is received within 4 days of the tender notice prescribed by the purchaser.

7. Amendment of bidding documents

7.1 At any time prior to the deadline for submission of bids, the purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by prospective bidder, modify the bidding documents by amendment.

7.2 The amendment will be notified online.

7.3 In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bid, the purchaser may, at its discretion, extend the deadline for the submission of bids.

C. Preparation of Bids

8. Language of Bid.

The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the bidder and the purchaser, shall be written in the English language, provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the bid, the English translation shall govern.

9. Documents comprising the bid

9.1 The bid prepared by the bidder shall comprise the following components:

1. Technical Bid:

(a) A Bid form completed in accordance with clause 10
(b) Documentary evidence established in accordance with clause 13 that the bidder is eligible to bid and is qualified to perform the contract if its bid is accepted.
(c) Documentary evidence established in accordance with clause 14 that the goods and ancillary services to be supplied by the Bidder are eligible goods and services confirm to the Bidding Documents; and
(d) Bid security furnished in accordance with clause 15.

2. The Price Bid completed in accordance with clauses 11 and 12.

10. Bid Form

10.1 The Bidder shall complete the bid form provided in the Bidding documents, indicating the quantity and other declaration statements.

11. Bid prices.

a) Bidders are required to quote rates on free delivery at Consignee location basis only. Bids received on far Destination Stations/ Station of dispatch basis or different rates for different destinations shall be summarily rejected. **Rates should be quoted in figures and words clearly INCLUSIVE OF GST, ALL TAXES, DUTIES, DISCOUNTS, TRANSPORTATION COST if any etc., ON SITE WARRANTY as mentioned in the tender.**

b) **The decision of Director General of State Disaster Response and Fire Services, Andhra Pradesh shall be final as regards the acceptability of tendered articles and goods to be supplied by the Bidders.**

12. Bid currencies.

12.1 Prices shall be quoted in Indian Rupees; Bids quoted other than Indian currency will be rejected.

13. Documents Establishing Bidder's Eligibility and Qualifications.

13.1 Pursuant to clause 9, the bidder shall furnish, as part of its bid, documents establishing the bidder’s eligibility to bid and its qualifications to perform the contract if its bid is accepted

13.2 The documentary evidence of the Bidder's eligibility to bid shall establish to the purchaser’s satisfaction that the bidder, at the time of submission of the bid, is an eligible bidder as defined under clause 2.

13.3 The documentary evidence of the Bidders qualifications to perform the contract if its bid is accepted, shall establish to the purchaser satisfaction;

(i) the legal status, place of registration and principle place of business of the company or firm or partnership etc.

(ii) Details of experience and past performance of the bidder on specified item offered in the bid and on those of similar nature within the past three years and details of current contracts in hand and other commitments (suggested proforma given in section XI);

(iii) Copy of the GST Certificate and Details of IT- PAN / TIN copies

(iv) The details in compliance to the Qualification Criteria (Section VI).

13.4 The check list for the details of documents to be submitted is given at Section XIII

14. Documents Establishing Supplier Eligibility and conformity to bidding documents.

14.1 Pursuant to clause 9 the bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the bidding document of all services which the bidder proposes to supply under the contract.

14.3 The documentary evidence of the items conformity to the bidding documents may be in the form of literature, drawings and data, and shall furnish:

(a) a detailed description of the item of essential technical and performance characteristics of the goods.
(b) A clause-by-clause commentary on the purchaser technical specifications demonstrating the goods and services substantial responsiveness to those specifications or statement of deviations and exceptions of the technical specifications.

14.4 For purpose of the commentary to be furnished pursuant to clause 14.3 above, the bidder shall note that standards for workmanship, material and goods, and references to brand names or catalogue numbers designated by the purchaser in its technical specifications are intended to be descriptive only and not restrictive. The bidder may substitute alternative standards, brand name and / or catalogue numbers in its bid, provided that it demonstrates to the purchaser's satisfaction that the substitutes are substantially equivalent or superior to those designated in the Technical specifications.

15. Bid security

15.1 Pursuant to Clause 9, the Bidder shall furnish, as part of it bid, the Bid security for the amounts specified in the Invitation for Bids (Section -1)

15.2 The bid security is required to protect the purchaser against risk of bidders conduct which would warrant the security forfeiture, pursuant to clause 15.7

15.3 The bid security shall be in Indian Rupees and shall be in one of the following forms:

(a) A bank guarantee issued by scheduled commercial bank located in India acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser and valid for 45 days beyond the validity of the bid; or

(b) A Demand Draft/Pay Order in favour of Managing Director, APMSIDC, Mangalagiri payable at Guntur.

15.4 Any bid not secured in accordance with para 15.1 and 15.3 above will be rejected by the purchaser as non-responsive pursuant to clause 24.

15.5 Unsuccessful Bidder's bid security will be discharged/ returned as promptly as possible but not later than 30 days after the expiration of the period of bid validity prescribed by the purchaser pursuant to clause 16.

15.6 The successful Bidder's bid security will be discharged upon the Bidders executing the contract, pursuant to clause 34 and furnishing the performance security pursuant to clause 35.

15.7 The bid security may be forfeited;

(a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid form; or

(b) In case of successful Bidder, if the Bidder fails;

(i) to sign the contract in accordance with clause 34; or

(ii) to furnish performance security in accordance with clause 35.

(c) If the Bidder does not accept the corrected amount the Bid will be rejected, and the Bid security may be forfeited.

16. Period of validity of Bids.

16.1 Bids shall remain valid for 90 days after the date of bid opening prescribed by the purchaser pursuant to Clause 19.1. A bid valid for shorter period may be rejected by the purchaser as non-responsive.

16.2 In exceptional circumstances, the Purchaser may solicit the Bidders consent to an extension of the period of validity the request and the responses thereto shall be made in writing (or by mail). The bid security provided under clause 15 shall also be suitably extended. A bidder may refuse the request without forfeiting its bid security.

17. Format and signing of Bid.

17.1 The bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the bidder to the contract. The latter authorization shall be indicated by written power-of-attorney accompanying the bid. All pages of the bid, except for unammended printed literature, shall be initialed by the person or persons signing the bid.

The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors and made by the bidder in which case such corrections shall be initialed by the person or persons signing the bid.

D. Submission of Bids

18. Sealing and Marking of bids.

18.1 The bids shall be uploaded (submitted) electronically, as described in the Invitation for Bids (Section –I).

18.2 The Bids shall be addressed to the purchaser at the following address:

The Managing Director, Plot No:09, survey number: 49, IT Park, Mangalagiri, Guntur District-522503.

19. Deadline, for submission of bids.

19.1 The Bids must be received by the purchaser, no later than the time and date specified in the Invitation for Bids (Section I). In the event of the specified date for the submission of Bids being declared a holiday for the purchaser, the Bids will be received up to the appointed time on the next working day.

19.2 The purchaser may, at its discretion, extend this deadline for submission of bids by amending the bid documents in accordance with clause 7, in which case all rights and obligations of the purchaser and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

20. Late Bids.

20.1 Any bid received by the purchaser after the deadline for submission of bids prescribed by the purchaser, pursuant to clause 19, will be rejected and/ or returned unopened to the Bidder.

21. Modification and Withdrawal of Bids.

21.1 No bid may be modified subsequent to the deadline for submission of bids.

21.2 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid form. Withdrawal of bid during this interval may result in the Bidders forfeiture of its bid security, pursuant to Clause 15.7

E. Bid Opening and Evaluation

22. Opening of Bids by Purchaser

22.1 The Purchaser/or his authorized representative will download the technical bids on 19-**10-2026 at 03.01 PM**.

22.2 The Financial Bids of the Technically responsive bidder would be downloaded subsequently from the e-platform, once the technical evaluation is completed.

23. Clarification of Bids.

23.1 To assist in the examination, evaluation and comparison of bids the purchaser may at his discretion, ask the Bidder for clarification of his bid. The request for clarification and the response shall be in writing and no change in price or substance of the bid shall be sought, offered or permitted.

24. Technical Evaluation (Preliminary Examination and Pre-Qualification)

24.1 The purchaser will examine the bids to determine whether they are complete, whether required securities have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.

24.2 Prior to the financial evaluation, pursuant to clause 26, the purchaser will determine the responsiveness of each bid to the bidding documents. For purposes of these clauses, a responsive bid is one which conforms to all the terms and conditions of the bidding documents without material deviations. The purchaser's determination of bids responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

24.3 Further the purchaser will determine to his satisfaction whether the Bidder is qualified to satisfactorily perform the contract. The determination will take into account the Bidder's financial, technical and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder pursuant to clause 13 as well as such other information as the purchaser deems necessary and appropriate.

24.4 An affirmative determination will be prerequisite for the opening of the financial bids. A negative determination will result in rejection of the Bidder's bid.

24.5 A bid determined as not substantially responsive will be rejected by the purchaser.

24.6 The Purchaser may waive any minor informality or non-conformity or irregularity in a bid which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any bidder.

25. Deleted.

26. Evaluation and comparison of Bids.

26.1 The Purchaser will evaluate and compare bids previously determined to be substantially responsive, pursuant to clause 24 for each schedule separately.

26.2 The purchaser's evaluation of a bid will take into account; in addition to the bid price (Goods offered), such price to include all costs as well as duties and taxes paid or payable and cost of incidental services required. The following costs to the extent specified:

a. cost of inland transportation, insurance and other costs within India incidental to the delivery of goods to their final destination;

b. the availability of spare parts and after-sales services for the item including any equipment offered in the bid. To this extent the bidders shall give:
    - An Undertaking Availability/ establishment to ensure uninterrupted after sales service during warranty and maintenance period shall be confirmed.

27. Deleted

28. Contacting the purchaser.

28.1 Subject to clause 23, no Bidder shall contact the purchaser on any matter relating to the bid, from the time of the bid opening to the time, the contract is awarded.

28.2 Any effort by a Bidder to influence the Purchaser in the purchaser's bid evaluation, bid comparison or contract award decisions may result in rejection of the Bidders bid.

F. Award of Contract

29. Post - Qualification

Not Applicable

30. Award Criteria

30.1 Subject to clause 32, the purchaser will award the contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily. The Client may award all vehicles to the lowest bidder and declare it as the sole Procurement of certain Personnel protective equipment. However, the Client shall have the right to ask other bidders to match the price quoted by lowest bidder and may distribute the vehicles among the bidders, if they agree to match the quote of the lowest bid.

31. Purchaser’s right to vary quantities at Time of Award

32.1 The Purchase Order will be issued to the lowest quoted price (L1) bidder, subject to the availability and release of funds by the Government.

32. Purchaser’s right to accept any Bid and to reject any or all Bids.

32.2 The purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to award of contract, without there by incurring any liabilities to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.

33. Notification of Award.

33.1 Prior to the expiry of the period of the bid validity, the purchaser will notify the successful Bidder in writing by registered letter or cable or telex, duly confirming that the bid has been accepted.

33.2 The notification of award will constitute the formation of the contract.

33.3 Upon the successful Bidder's furnishing of performance security, pursuant to clause 34, the purchaser will promptly notify each unsuccessful Bidder and will discharge their bid security, pursuant to clause 15.

34. Signing of contract

34.1. Within 15 days of receipt of the notification of award the successful Bidder shall sign the contract.

Performance security

35.1 Within 15 days of the receipt of notification of award from the purchaser, the successful Bidder shall furnish the performance security in accordance with the conditions of contract, in the performance security form provided in the Bidding documents or another form acceptable to the purchaser and signs the agreement.

35.2 Failure of the successful Bidder to comply with the requirement of clause 34 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the purchaser may make the award to the next lowest evaluated bidder or call for new bids.

36 Fraud and corruption

36.1 It is the **purchaser'**s policy that requires that the bidders, suppliers and contractors and their subcontractor observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the **purchaser;**

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) **"corrupt practice"** is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
(ii) **"fraudulent practice"** is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
(iii) **"collusive practice"** is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
(iv) **"coercive practice"** is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
(v) **"obstructive practice"** is

(aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from

disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
(bb) acts intended to materially impede the exercise of the purchaser's inspection and audit rights provided for under sub-clause 36.2 (d) below.

36.2 The purchaser may, without prejudice to other terms of the bidding:

(a) will reject a proposal for award if it determines that the bidder considered for
A ward has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;

(b) will cancel the contract if the purchaser determines at any time that the bidder, supplier and contractors and their sub contractors engaged in corrupt, fraudulent, collusive, or coercive practices.

(c) will sanction a firm or individual, including declaring ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, a contract; and

(d) will have the right to inspect the accounts and records of the bidders,
supplier, and contractors and their subcontractors and to have them audited by auditors appointed by the Purchaser.

SECTION - III: GENERAL CONDITIONS OF CONTRACT

TABLE OF CLAUSES

Clause Number	Topic
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Section III: General Conditions of Contract

1. Definitions

1.1 In this contract, the following terms shall be interpreted as indicated;

(a) "The contract" means the agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all the attachments and appendices thereto and all documents incorporated by references therein.

(b) " The contract Price" means the price payable to the supplier under the contract for the full and proper performance of its contractual obligations.

(c) " The Goods" means all the Procurement of certain Personnel protective equipment as per Section V which the supplier is required to supply to the purchaser under the contract.

(d) "Services " means services ancillary to the supply of the goods, such as transportation, insurance and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other obligations of the supplier covered under the contract.

(e) “An undependable Supplier/s’ under contract means any Supplier who do not accept the purchase order or who delays the supply of required quantities beyond the permitted delays with liquidated damages

(f) "The Purchaser or Corporation" means the APMSIDC, the purchasing agency or any other agency authorized by the APMSIDC

(g) "The Supplier" means the individual or firm supplying the goods under this contract.

(h) “The Government” means the Government of Andhra Pradesh or its authorized representatives

(i) “The Project Site”, where applicable means the place or places named in Schedule of Requirements

(j) “The End-User” means the authorized user of the Procurement of certain Personnel protective equipments

(k) “Day” means calendar day

(l) “Delivery period” means the period applicable up to completion of supply.

2. Application

2.1. These General conditions shall apply to the extent that they are not superseded by provisions in other parts of the contract.

3. Country of Origin: Deleted.

4. Standards

4.1 The Goods supplied under this contract shall conform to the standards mentioned in the Technical specifications and when no applicable standard is mentioned the authoritative standard appropriate to the goods country of origin shall be followed and such standard shall be the latest issued by the concerned institution.

5. Use of contract documents and Information

5.1 The supplier shall not without the purchaser's prior written consent, disclose the contract or any provision thereof or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the purchaser in connection therewith to any person other than a person employed by the supplier in performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchasers prior written consent make use of any document or information enumerated in para 5.1 except for purposes of performing the contract.

5.3 Any document other than the contract itself enumerated in para 5.1 shall remain the property of the purchaser and shall be returned (in all copies) to the purchaser on completion of the suppliers performance under the contract if so required by the purchaser.

6. Patent Rights

6.1 The supplier shall indemnify the purchaser against all third party claims of infringement of patent, trademark for industrial design rights arising from use of the goods or any part thereof in India..

7. Performance Security

7.1 Within 15 days after the supplier's receipt of notification of award of the contract, the supplier shall furnish performance security of 5% of contract value to the purchaser for the amount specified in the special conditions of contract.

7.2 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

7.3 The performance security shall be denominated in Indian Rupees and shall be in the form of a Crossed Demand Draft in favour of Managing Director, APMSIDC, Mangalagiri.

7.4 Performance security will be discharged by the *Purchaser* and returned to the supplier after the end of contract period i.e. following the date of completion of the supplier's performance obligations, including any warranty obligations.

8. Inspections and Tests.

The successful Tenderer shall have the work inspected and approved at the following stages by the Officers nominated by the Director General of State Disaster Response and Fire Services along with one of the following authorized agencies to be selected by the Department.
Under writers Laboratories Inc. (UI India Private Limited)
Indian Register of Shipping (IRS Inspection services)
Any other specialized Organized agencies approved by the Government.
The firm should meet the inspection charges and travel expenses of the officers of the above agencies. The acceptance of the items is subject to inspection by officers of Andhra Pradesh State Disaster Response and Fire Services Department and the representatives of the one of the above agencies, in stages as suggested in the Technical Tender Specification.

9. Packing

9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the contract. 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 appropriated the remoteness of the Goods final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements, as shall be provided for in the contract and subject to clause 18 and any subsequent instructions ordered by the purchaser.

10. Delivery and Documents

10.1 Delivery of the Goods shall be made by the supplier in accordance with the terms specified by the purchaser in the Notification of Award.

11. Insurance

11.1 The goods supplied under the contract shall be fully insured in Indian Rupees against the loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the special conditions of contract.

12. Transportation

12.1 The supplier is required to deliver the goods to the destinations specified in the contract and the cost thereof shall be included in the contract price.

12.2 The transportation of the Goods after the delivery at the final destination shall be the responsibility of the Purchaser.

13. Incidental services.

13.1 The supplier is required to provide the following services, including additional services, if any, specified in SCC:

(a) Performance of the on-site assembly and start-up of the supplied Goods;

(b) Furnishing of tools required for assembly and maintenance of the supplied Goods;

(a) Furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods;

(b) Performance of maintenance and repair of the supplied Goods, for a period of 1 year, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and

(e) Training of the users and maintenance personnel, in operation, maintenance and repair of the supplied Goods.

13.2 Prices charged by the Supplier for incidental services, if not included in the contract price of the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

14. Spare Parts:

14.1 As specified in the special conditions of contract, the supplier may be required to provide the following materials and notifications pertaining to spare parts manufacturer:

(a) Such of spare parts as the purchaser may select to purchase from the supplier providing that this selection shall not relieve the supplier of any warranty obligations under the contract and

(b) In the event of termination of production of the spare parts;

(i) advance notification to the purchaser of the pending terminating in sufficient time to permit the purchaser to procure needed requirements : and

(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawing and specifications of the spare parts, if and when requested.

15. Warranty

	GUARANTEE/WARRANTY	
	1	Except as otherwise provided in the invitation to the tender, the bidder shall declare that the goods, stores, articles sold/supplied to the purchaser under this contract shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specification and particulars contained/mentioned in the contract.
	2	The bidder hereby guarantees that the said stores would continue to conform to the description and quality aforesaid **for a period 24 calendar months of warranty** from the date of delivery of the said stores to the purchaser notwithstanding the fact that the purchaser (Inspecting Authority) may have inspected and/or approved the said stores.
	3	If during the aforesaid period of warranty, the said stores be discovered not to conform to the description and quality aforesaid or not giving satisfactory performance or have deteriorated, the decision of the purchaser in that behalf shall be final and binding on the bidder and purchaser shall be entitled to call upon the bidder to rectify the stores or such portion thereof as is found to be defective by the purchaser within a reasonable period or such specified period as may be allowed by the purchaser in his discretion on/an application made thereof by the bidder and in such an event, the above mentioned warranty period shall apply to the stores from the date of rectification thereof.
	4	In case of failure of the bidder to rectify or replace the goods etc. within specified time, the purchaser shall be entitled to recover the cost with all expenses from the bidder for such defective stores.
	5	In the event of contract being cancelled for any breach committed and the purchaser affecting re-purchase of the stores at the risk and the cost of the bidder, the purchaser is not bound to accept the lower offer of allied or sister concern of the bidder.
	6	Purchaser will not pay separately for transit insurance and the supplier will be responsible till the entire stores contracted for, arrive in good condition at the destination. The consignee, as soon as possible but not later than 30 days of the date of arrival of the stores at destination, notify to the bidder any loss or changes to the stores that may have occurred during the transit.
	7	Bidders who are past suppliers of the item as per T/E Specification should submit their performance statement in enclosed Proforma. In case, it is found that information furnished is incomplete or incorrect, their tender will be liable to be ignored.
	8	**GOVT. POLICY** The purchaser reserves the option to give a purchase/price preference to offers from the public sector units and / or from other Firms in accordance with the policies of the Govt. from time to time.

16. Payment

16.1 The method and conditions of payment to be made to supplier under the contract shall be specified in the special conditions

16.2 The Suppliers request (s) for payment shall be made to the purchaser in writing accompanied by an invoice describing as appropriate the goods delivered and the services performed and by shipping document, submitted pursuant to clause 10, and upon fulfillment of other obligations stipulated in the contract.

16.3 Payments shall be made by the purchaser within sixty (60) days of submission of the invoices / claims by the supplier duly furnishing the certificate specified in the bid document from the competent authority.

16.4 Payment shall be made in Indian Rupees.

17. Prices

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not except for any price adjustments authorized by the special conditions of contract, vary from the prices quoted by the supplier in its bid.

18. Change Orders

18.1 The Purchaser may at any time by written orders given to the supplier pursuant to clause 31, make changes within the general scope of the contract in any one or more of the following;

(a) drawings, designs or specifications, where goods to be furnishing under the contract are to be specifically manufactured for the purchaser;
(b) the method of shipping or packing;
(c) the place of delivery; or
(d) the services to be provided by the supplier;

18.2 If any such changes causes an increase or decrease in the cost of or the time required for the suppliers performance of any part of the work under the contract, whether changed or not changed by the order, an equitable adjustment shall be made in the contract price or delivery schedule or both and the contract shall accordingly be amended. Any claims by the supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the suppliers receipt of the purchasers change order.

19. Contract Amendments

19.1 Subject to clause 18, no variation in an modification of the terms of the contract shall be made except by written amendment signed by the parties .

20. Assignment

20.1 The supplier shall not assign in whole or in part, its obligations to perform under the contract, except with the purchasers prior written consent.

21. Sub-contracts

21.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under the contract if not already specified in his bid. Such notification, in his original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

22. Delays in the suppliers performance

22.1 Delivery of the goods and performance of the services shall be made by the supplier in accordance with the time schedule specified by the purchaser in its schedule of requirements.

22.2 Any unexcused delay by the supplier in the performance of its delivery obligations shall render the supplier liable for any or all of the following; i.e. forfeiture of its performance security, imposition of liquidation damages and or termination of the contract for default.

22.3 If at any time during the performance of the contract, the supplier or its subcontractor (s) should encounter performance of the services the supplier shall promptly notify the purchaser in writing of the fact of the delay its likely duration and its causes. As soon as practicable after receipt of the suppliers notice, the purchaser shall evaluate the situation and may at its discretion extend the suppliers time for performance, in which case the extension shall be ratified by the parties by amendment of the contract.

23. Liquidated Damages

23.1 Subject to clause 25, if the supplier fails to deliver any or all of the goods within the time period specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price as liquidated damages, an amount as specified in the SCC for the period of delay, until actual delivery or performance, up to a maximum deduction of 10 percent of the delayed goods or services contract price. Once the maximum is reached, the purchaser may consider termination of the contract.

24. Termination for Default

24.1 The purchaser may, without prejudice to any other remedy for breach of contract by written notice of default sent to the supplier, terminate the contract in whole or part:

(a) if the supplier fails to deliver any or all of the goods within the time periods specified in the contract or any extension thereof granted by the purchaser pursuant to clause 22; or

(b) if the supplier fails to perform any other obligations under the contract.

24.2 In the event the purchaser terminates the contract in whole or in part, 24.1 the purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar Goods. However, the supplier shall continue the performance of the contract to the extent not terminated.

25. **Force Majeure**

25.1 Not withstanding the provisions of clauses 22,23,24, the supplier shall not be liable for forfeiture of its performance security liquidated damages or termination or default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.

25.2 For purposes of this clause " Force Majeure" means an event beyond the control of the supplier and not involving the suppliers fault or negligence and not foreseable. Such events may include but are not limited to, acts of the purchaser either in its sovereign or contractual capacity, wars or revolutions, floods, epidemics, quarantine restrictions and freight embargoes.

25.3 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the purchaser in writing the supplier shall continue to perform its obligations under the contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for Insolvency.

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier, if the supplier becomes bankrupt or otherwise insolvent , provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Termination for convenience.

27.1 The purchaser, may by written notice sent to the supplier terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchasers convenience the extent to which performance of work under the contract is terminated and the date upon which such termination becomes effective.

27.2 The goods that are complete and ready for shipment within 30 days after the suppliers receipt for notice of termination shall be purchased by the purchaser and the contract terms and prices. For the remaining goods the purchaser may elect.

(a) to have completed and delivered at the contract terms and prices; and / or

(b) to cancel the remainder and pay to the supplier and agreed amount for partially completed goods and for materials and parts previously procured by the supplier.

28. Resolution of Disputes

28.1 The purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the contract.

28.2 If after thirty (30) days from the commencement of such informal negotiations the purchaser and the supplier have been unable to resolve amicably contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in the special conditions of contract. These mechanisms may include but are not limited to conciliation, mediation by third party justification in an agreed national or international forum and / or international arbitration. The mechanism shall be specified in the special conditions of contract.

Governing Language

29.1 The contract shall be written in English language, as specified by the purchaser in the instructions to bidders. Subject to clause 30, English language version of the contract shall govern

30. Applicable law

30.1 The contract shall be interpreted in accordance with the laws of the union of India and the legal jurisdiction is Vijayawada.

31. Notices

31.1 Any notices given by one party to the other pursuant to the contract shall be sent in writing and confirmed in writing to the address specified for that purpose in the special conditions of the contract. A notice shall be effective when delivered or on the notices effective date, whichever is later.

32. Taxes and duties

32.1 The rates quoted by the bidder shall be deemed to be inclusive of the sales and other taxes that the bidder will have to pay for the performance of this contract, at the prevailing rates notified by the Government. The purchaser will perform such duties in regard to the deduction of such taxes at source as per applicable law.

SECTION - IV: SPECIAL CONDITIONS OF CONTRACT

TABLE OF CLAUSES

(The corresponding clause number of the General condition is in parenthesis)

Item. No.	Topic.
2.	Definitions (Clause - 1)
3.	Country of Origin (Clause -3)
4.	Performance security (Clause 7)
5.	Inspection and Tests (Clause 8)
6.	Packing (Clause-9)
7.	Delivery and Documents (Clause 10)
8.	Insurance (Clause 11)
9.	Incidental services (Clauses 13)
10.	Spare Parts (Clause 14)
11.	Warranty (Clause 15)
12.	Payment (Clause 16)
13.	Prices (Clause 17)
14.	sub-contracts (Clause 21)
15.	Liquidated Damages (Clauses 23)
16.	Resolution of Disputes (Clauses 28)
17.	Notices (Clauses 31)
18.	Comprehensive Maintenance Contract
19.	Actions against Misconduct of the Supplier
20.	Progress of Supplies

Section IV: Special Conditions of the Contract

1. The following special conditions of contract shall supplement the general Conditions of contract. Whenever there is conflict, the provisions herein shall prevail over those of the general conditions of contract the corresponding clause number of the general conditions in parentheses.
2. Definitions (Clause I)

(a) The Purchaser is: The Managing Director, APMSIDC, Mangalagiri or any other authorized representative notified by the Purchaser.

(b) The Supplier is: ----------

3. Country of origin (Clause 3): All goods and related services to be supplied under the contract / agreement shall have their origin in India or any other country with which India has not banned trade relations.
4. Performance security (Clause 7)

4.1 Performance security is 5% of the contract value and shall be valid up to 60 days after the date of completion of performance obligations including warrant obligations and maintenance obligations, as applicable.

4.2 Add clause 7.5 to the GCC as the following:

In the event of any contract amendment, the supplier shall within 7 days of receipt of such amendment furnish the amendment to the performance security rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter

5. Inspection and Tests (clause 8)

The successful Tenderer shall have the work inspected and approved at the following stages by the Officers nominated by the Director General of State Disaster Response and Fire Services along with one of the following authorized agencies to be selected by the Department.
Under writers Laboratories Inc. (UI India Private Limited)
Indian Register of Shipping (IRS Inspection services)
Any other specialized Organized agencies approved by the Government.
The firm should meet the inspection charges and travel expenses of the officers of the above agencies. The acceptance of the items is subject to inspection by officers of Andhra Pradesh State Disaster Response and Fire Services Department and the representatives of the one of the above agencies, in stages as suggested in the Technical Tender Specification.

6. Packing (Clause 9)

The Supplier will be required to pack the goods installed/placed inside the Procurement of certain Personnel protective equipments if required during transportation with following markings:
Name of the contract, ii. Contract No., iii. Country of origin of Goods, iv. Supplier's Name and v. Packing of list reference number

7. **Delivery and Documents (Clause 10)**

(i) Three copies of the Supplier invoice showing Goods description, quantity, unit price, total amount;
(ii) Railway receipt/acknowledgement of receipt of goods from the Purchaser
(iii) Manufacture's/Supplier's Warranty and Factory Test certificate as applicable;
(iv) Acceptance Certificate issued by the Purchaser
(v) Inspection Certificate issued by the nominated inspection agency, as applicable

8. **Deleted**
9. **Incidental Services (Clause 13)**
No additional services are required to be provided over the services already covered under clause 13 of GCC.\
10. **Spare parts: (Clause 14)**

Add as clause 14.2 to the GCC the following:

During the warranty period, Supplier shall carry sufficient inventories to assure ex stock supply of consumables spares such as gaskets, plugs, washers, belts etc., other spare parts and components shall be promptly as possible but in any case within (3) days of placement of order.

11. **Warranty (Clause 15)**

11.1 In partial modification of the provisions, the warranty period shall be 12 months, after the Goods, or any portion thereof, as the case may be, have been delivered at site, installed, commissioned, successfully tested and accepted by the Purchaser or its authorized representative.

11.2 Substitute Clause 15.4 of the GCC with the following:

Upon receipt of such notice, the Supplier shall within 3 days, repair or replace the defective goods or parts thereof, free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement.

11.3 If the supplier has not done repair/replacement within the time specified above the purchaser will assess the cost of having the repairs/replacements done and the supplier will pay this amount.

11.4 All software updates, if any required, should be provided free of cost during Warranty period.

12. Payment (Clause 16)

12.1 Payments for the supply of vehicles shall be made in Indian Rupees, lot wise (11 Nos) as and when delivered. 90% of the contract value after preliminary inspection tests such as shower test & any other tests will be paid to the supplier on submission of copy of invoice with original Delivery Challan as proof of supply to destinations, duly certified by the Client. remaining 10% will be paid after three months from the date of installation on submission of performance satisfactory report (Annexure-lll), obtained from the Purchaser or its authorized authorities.

12.2 In case any difficulty is experienced by the successful tenderer in obtaining three month performance certificate from any of the purchaser authorized authorities after the commission of the PROCUREMENT OF CERTAIN TRAINING AIDS & EQUIPMENT AND RESCUE EQUIPMENT TO A.P STATE DISASTER RESPONSE AND FIRE SERVICES DEPARTMENT the same shall be brought to the notice of the Purchaser immediately in writing. In such event(s), if the Purchaser is convinced, the reasons are beyond the control of the successful tenderer, the Purchaser, in case of supply orders placed by it, shall release payments at its discretion. In such case the letter sent to the Purchaser shall be submitted along with the invoices while claiming payment

13. Prices (Clause 17)

Prices payable to the Supplier as stated in the Contract shall not be subject to adjustment during performance of the Contract.

14. **Sub-contracts (Clause 21)**

Add at the end of sub-clause 21.1 of the GCC the following. “Sub-contract shall be only for bought-out items and sub-assemblies”.

15. Liquidated Damages (Clause 23)

15.1 <u>For delays</u>

Substitute Clause 23.1 of the GCC by the following:

Subject to clause 25 of GCC, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to 0.5 percent of the delivered price of the delayed Goods for each week of delay or part thereof until actual delivery, up to a maximum deduction of 10% of the contract price. Once the maximum deduction is reached, the Purchaser may consider termination of the Contract.

15.2.1 For Short fall in **Procurement of certain Personnel protective equipment**

Any major repair intimated by the *Purchaser* shall be rectified by the Supplier from the date of intimation within a period of 3 days related to equipment of PROCUREMENT OF CERTAIN TRAINING AIDS & EQUIPMENT AND RESCUE EQUIPMENT to the satisfaction of the Purchaser. Failing which the Purchaser has a right to levy a penalty on the Supplier a sum of Rs.1,000/- per day of delay, until the defect is repaired and brought to the normal working condition to the satisfaction of the Purchaser.

16. Resolution of Disputes (Clause 28)

Add as Clauses 28.3 and 28.4 of the GCC the following:

28.3 The dispute resolution mechanism to be applied pursuant to clause 28 of the General Conditions shall be as follows:

(a) In the case of dispute or difference arising between the Purchaser and a Domestic Supplier relating to any matter arising out of or connected with this agreement, such dispute or difference shall be referred to the award of two Arbitrators, one Arbitrator to be nominated by the Purchaser and the other to be nominated by the Supplier or in the case of the said Arbitrators not agreeing, then at the award of an Umpire to be appointed by the Arbitrators in writing before proceeding with the reference, and in case the Arbitrators cannot agree to the Umpire, he may be nominated by the Arbitration committee of the Indian Council of Arbitration, India. The award of the Arbitrators, and in the event of their not agreeing, of the Umpire appointed by them or by the Arbitration Council of India, India, shall be final and binding on the parties.

(b) The amended Indian Arbitration and Conciliation Act 2015 the rules thereunder and any statutory modification or re-enactments thereof, shall apply to the arbitration proceedings.

28.4 The venue of arbitration shall be the place from where the Contract is issued.

17. Notices (Clause 31)

For the purpose of all notices, the following shall be the address of the purchaser and supplier.

Purchaser: The Managing Director, Plot No:09, survey number: 49, IT Park, Mangalagiri, Guntur District- 522503.

Supplier: (To be filled in at the time of Contract Signature)

18. Comprehensive Warranty Period

Supplier shall provide a minimum of 2 years warranty. The warranty of 2 years shall be from the date of delivery of last lot.

19. Actions Against the Misconduct of the Supplier

19.1 A Supplier found being supplied similar items with similar tender conditions to any other agency in the country during the validity of the contract with the APMSIDC, at a rate lower than the rate at which they supplied under this tender, the difference amount is liable to be recovered apart from blacklisting the firm for a minimum period of 3 years. The Supplier should furnish undertaking (Section-XIII) that they will remit the differential cost, if they quote lower rate than the rate quoted to the APMSIDC to any other agency or department or state, during the period of contract

19.2 Any substandard supplies without meeting the quality specifications made under the contract shall also entail blacklisting of the firm for a minimum period of three years for that particular product.

19.3 If the bidder fails to demonstrate on asked to do so, of the products quoted with their bid, without any valid or convincing reason to the satisfaction of the Purchaser, the bids for other items offered against the bid notice will not be considered and he may be debarred for a certain period as decided by the Purchaser.

20. Progress of Supply

Supplier shall intimate progress of supply, in writing, to the Purchaser as under :

- Qty offered for inspection and date;
- Qty. accepted/rejected by inspecting agency and date;
- Qty. dispatched/delivered to Purchaser and date;
- Qty. where incidental services have been satisfactorily completed with date;
- Quantity where rectification/repair/replacement effected/completed, on receipt of any communication from consignee/Purchaser with date;
- Date of completion of entire Contract including incidental services, if any; and Date of receipt of entire payments under the Contract.

SECTION V
SCHEDULE OF REQUIREMENTS AND TECHNICAL SPECIFICATIONS

S. No	Name of the item	Estimation Cost Value (in Rupee)	EMD	Avg. Annual turnover Fy 2022-23, 2023-24, 2024-25
1	Training Aids (list enclosed)	77,30,240	2,31,907	77,30,240
2	Training Equipment (list enclosed)	2,19,12,800	6,57,384	2,19,12,800
3	Fire Fighting & Rescue Equipment (List enclosed)	4,40,90,200	13,22,706	4,40,90,200
4	Out Board Motors – 10 No's	39,20,000	1,17,600	39,20,000
	Total Amount	7,76,53,240		
	Total Amount Incl. 2% service charges	**7,92,38,000**		

Processing fee: The participating bidders will have to pay tender processing fee (non-refundable) of Rs**. 11,800/-** in the form of online only.

Note:

1. All the participants should furnish the **EMD**.
2. However, a bidder having an average turnover of 5.00 Crores in the last three financial years and EMD 5 lakhs shall be eligible to bid for any number of equipment for the above list.

Technical Specifications

S. No	A. Training AIDS	Specifications	Quantity
List of items & Equipment identified			
	Fire Fighting Props		
1	Aluminium Extension ladder	Annexure -I	**05 Nos**
2	Hose Pipes with Couplings (Rubber Lined) – 22.5 Mtrs	Annexure -II	**50 Nos**
3	**Branch Pipes**		
	a) Short Branch Pipe	Annexure -III	10 Nos
	b) Triple Purpose Branch		10 Nos
	c) Revolving Branch Pipe		10 Nos
4	Nozzles	Annexure -IV	20 Nos
	Rescue Equipment		
1	**Ropes** a) Manila (50 Mtrs)	Annexure -V(A)	10 Nos
	b) Cotton (50 Mtrs)	Annexure -V-(B)	10 Nos
	c) Nylon (50 Mtrs)	Annexure -V(C)	10 Nos
2	Harnesses	Annexure -VI	10 Nos
3	Stretcher (scoop)	Annexure -VII	05 Nos
4	Cutters 1. Petrol Powered chain Saw for wood (Large)	Annexure -VIII-A	5 Nos
	2. Electrical Powered Chain Saw for wood	Annexure -VIII-B	3 Nos
5	**Communication Devices** 1. Mega Phone	Annexure -IX-A	3 Nos
	2. Walkey Talky set	Annexure -IX-B	30 Nos
	3. Infrastructure Rope rescue Hard rills	Annexure -IX-C	1 No
6	Breathing Apparatus (B.A set)	Annexure -X-A	15 Nos
7	B.A set Cylinder Refilling Compressor	Annexure -X-B	1 No
8	Thermal imaging camera	Annexure - XI	1 No

	B. Training Equipment			
S. No	**List of item & Equipment identified for Training centre**		**Specifications**	
1	**Fire Extinguishers of different types-06 No's of each type**	Water type	IS Code : 1940 (2003)/Latest version	6 Nos
		DCP	IS Code : 2171(1999)/ Latest version	6 Nos
		CO2	IS Code : 2878(2004)/ Latest version	6 Nos
		Foam	IS Code : 4989(2018)/ Latest version	6 Nos
		ABC Type	IS Code : 2171(1999)/ Latest version	6 Nos
		HHC type	IS Code : 15683(2018)/ Latest version	6 Nos
2	Fire Extinguishers of different types (cut section) -01 No. of each type	Water type	IS Code : 1940 (2003)/Latest version	1 No
		DCP	IS Code : 2171(1999)/ Latest version	1 No
		CO2	IS Code : 2878(2004)/ Latest version	1 No
		Foam	IS Code : 4989(2018)/ Latest version	1 No
		ABC Type	IS Code : 2171(1999)/ Latest version	1 No
		HHC Type	IS Code : 15683(2018)/ Latest version	1 No
3	Trailer pump with primer for training purpose	Annexure – XII		1 No
4	Pumps/Primer: centrifugal Pumps, Reciprocating pumps, Rotary pump etc. (cut section) -02 No's of each type	Annexure-XIII		1 No
5	Engine cooling system (cut section)	Annexure-XIV		1 No
6	Power take off gearbox (PTO) from Engine to pump (cut section)	Annexure-XV		1No
7	Model of sprinkler installation control valve with suitable water storage and pumping operation	Annexure-XVI		1No
8	Automatic Fire alarms of different types/working models	Annexure-XVII		1No

9	Foam and Foam making equipment	Annexure-XVIII	1No
10	Ropes and display of various Knots tyoes-02 nos of each type	Annexure-XIX	1No
11	Hydraulic rescue Combi tool (cutter, spreader, combi tools etc	Annexure-XX	1 No
12	1. B.A set (with ADSU)	Annexure-XXI -A	5 Nos
	2. Spare Cylinders		15 Nos
	3. B.A compressor (if additional requirement arises, may be pooled from fire station inventory)	Annexure-XXI -B	1 No
13	Portable Pump and Floating pump	Annexure-XXII -A & B	02+02 Nos
14	Smoke Exhauster/PPV	Annexure-XXIII	2 Nos
15	Pneumatic lifting Bags (various sizes)	Annexure-XXIV	2 Nos
16	Hand held Gas Detector	Annexure-XXV	5 Nos
17	Personal protection Equipment (as per requirement)	Annexure-XXVI	1 No
18	Victim location Device search camera/Acoustic Devices, etc.	Annexure-XXVII	1 No
19	CSSR Equipment	Annexure-XXVIII	1 No
20	MFR Equipment	Annexure-XXIX	1 No
	C. Fire Fighting Equipment		
	1. Toxic Chemical Neutralizers 4 Kg	Annexure-XXX - A	85 No's
	2. Forced Entry Tool kit-	Annexure-XXX-B	17 No.s
	3. Remote operated life buoy -	Annexure-XXX-C	17 No.s
	4. Battery operated Combi tool-	Annexure-XXX-D	**17 No.s**
	D.Out Board Motor-	Annexure-XXXI	**10 Nos**

ANNEXURE-I

1. Aluminum Extension Ladder

General Specifications:

1. **Height: 35 feet (10.6 meters)**
2. **Number of Steps: 23 steps**
3. **Material: Aluminum alloy (6061-T6 or 6063-T5)**
4. **Weight Capacity: 300-375 lbs (136-170 kg)**
5. **Closed Length: 14.5 feet (4.4 meters)**
6. **Extended Length: 35 feet (10.6 meters)**
7. **Weight: approximately 63 Kgs**

Structural Specifications:

1. Side Rail Thickness: 2.5-3 inches (63.5-76.2 mm)
2. **Rung Thickness: 1.5-2 inches (38.1-50.8 mm)**
3. **Rung Spacing: 12 inches (305 mm)**
4. **Step Depth: 3-4 inches (76.2-101.6 mm)**
5. **Step Width: 4-5 inches (101.6-127 mm)**

Safety Features:

1. **Non-slip feet**
2. **Ergonomic handles**
3. **Safety shoes**
4. **Extension locking mechanism**
5. **Meets or exceeds ANSI/ASC A14.2-2017 and EN 131 standards**

Additional Features:

1. **Leveling feet**
2. **Corrosion-resistant coating**
3. **Compact design for easy storage**
4. **Durable and sturdy construction**
5. **Integrated rope or pulley system for easy extension**

IS CODE: 4571-1977(2010)

ANNEXURE-II
Hose Pipes with couplings (Rubber Lined) 22.5 Mtrs

Hose has excellent durability. The overall construction is of high tenacity synthetic fiber circular woven seamless reinforcement, totally encapsulated in all synthetic special polymer.

Materia	**Rubber Lined Fabric Reinforced Fire Hose with jacket of 100% Synthetic**
Working Pressur	**14 Bar (200 PSI)**
Test Pressur	**21 Bar (300 PSI)**
Burst Pressur	**35 Bar (500 PSI)**
Sizes	**63mm**
Standar	**IS : 636 Type B ISI Marked**
Lengt	**22.5 Meters**
Special Feature	**Hose has excellent heat and abrasion resistance. It is resistant against grease, oils, acids, ozone, fungus, alkalies, heat and chemicals. The special design facilitates a good grip, completely flexible, lightweight, no**

IS CODE: 9573-1998

ANNEXURE-III
Branch Pipe

Gunmetal Branch Pipes

1. Material: Gunmetal (Cu-85%, Zn-10%, Sn-5%)
2. Size (dia) :1/2" to 4" (12.7 mm to 101.6 mm)
3. Thickness: 1.5-3.5 mm (0.059-0.138")
4. Working Pressure: Up to 20 bar (290 psi)
5. Temperature Range: -20°C to 80°C (-4°F to 176°F)

Stainless Steel Branch Pipes

1. Material: SS 304/316
2. Size (dia):1/2" to 4" (12.7 mm to 101.6 mm)
3. Thickness: 1.2-3.6 mm (0.047-0.142")
4. Working Pressure: Up to 50 bar (725 psi)
5. Temperature Range: -20°C to 400°C (-4°F to 752°F)

Fittings and Connectors:

1. Elbows: 90°, 45°, 30°
2. Tees: Equal, reducing
3. Couplings: Threaded, flanged
4. Adapters: Threaded, flanged

Standards and Certifications:

1. ASTM A312 (Stainless steel)
2. ISO 9001

Applications:

1. Water supply systems
2. Fire protection systems
3. Industrial processes
4. HVAC systems
5. Chemical processing

A) The Akron Turbojet Nozzle with black handle and pistol grip is a popular firefighting tool. Here are some key specifications:

General Specifications:

1. Nozzle Type: Turbojet
2. Manufacturer: Akron Brass
3 Material: Pyrolite
4. Handle Color: Black
5. Grip Style: Pistol grip
6. Inlet Size: Various (e.g., 1.5", 2", 2.5")
7. Thread Type: National Hose (NH) or International Thread (IT)

8. Flow Rate: 200-1000 GPM (gallons per minute)
9. Pressure: Up to 1000 PSI (pounds per square inch)
10. Pattern: Adjustable (fan to straight stream)

Additional Features:
1. Stream shaper technology for efficient water distribution
2. Flush without shutting down
3. Durable, corrosion-resistant materials

(B) Triple Purpose Branch

General Specifications:
1. Material: Stainless steel
2. Size(dia): 1/2" to 4" (12.7 mm to 101.6 mm)
3. Length: 3-12 meters (10-39.4 feet)
4. Connection Type: Threaded, flanged, or welded
5. Working Pressure: Up to 20 bar (290 psi)

Triple Purpose Features:
1. Three outlets (e.g., 2 x 1" and 1 x 2")
2. Integrated valve or tap for each outlet
3. Common inlet with single connection
4. Compact design for space-saving installation

Stainless Steel Triple Purpose Branch Pipes:
1. Material: SS 304/316
2. Thickness: 1.2-3.6 mm (0.047-0.142")
3. Working Pressure: Up to 50 bar (725 psi)
4. Temperature Range: -20°C to 400°C (-4°F to 752°F)

Standards and Certifications:
1. ISO 9001
2. ASTM A312 (Stainless steel)

(C) Revolving Branch Pipe General Specifications:
1. Material: Stainless steel
2. Size (dia):1/2" to 4" (12.7 mm to 101.6 mm)
3. Length: 3-12 meters (10-39.4 feet)
4. Connection Type: Threaded, flanged, or welded
5. Working Pressure: Up to 20 bar (290 psi)

Revolving Features:
1. 360° rotation for easy direction change
2. Self-aligning mechanism for smooth operation
3. Locking mechanism for secure positioning
4. Integrated sealing system for leak prevention

Mechanical Specifications:

1. Rotation Type: Manual or pneumatic
2. Rotation Speed: Up to 360°/sec
3. Torque Requirement: 10-50 Nm
4. Sealing Type: O-ring or gasket

Stainless Steel Revolving Branch Pipes:

1. Material: SS 304/316
2. Thickness: 1.2-3.6 mm (0.047-0.142")
3. Working Pressure: Up to 50 bar (725 psi)
4. Temperature Range: -20°C to 400°C (-4°F to 752°F)

Standards and Certifications:
1. ISO 9001
2. EN 10242 (Gunmetal)
3. ASTM A312 (Stainless steel)

ANNEXURE-IV
SPECIFICATIONS OF Nozzles

Brass Nozzles
1. Material: Brass (ASTM B121, C36000)
2. Size (dia):1/8" to 2" (3.2 mm to 50.8 mm)
3. Connection Type: Threaded (NPT, BSP, etc.), Flanged
4. Working Pressure: Up to 3000 psi (207 bar)
5. Temperature Range: -20°C to 200°C (-4°F to 392°F)
6. Spray Angle: 0° to 120°
7. Flow Rate: 0.1-100 GPM (0.4-378 L/min)
8. Finish: Polished or plated (Chrome, Nickel)

Stainless Steel Nozzles
1. Material: SS 304, SS 316 (ASTM A479)
2. Size(dia): 1/8" to 4" (3.2 mm to 101.6 mm)
3. Connection Type: Threaded (NPT, BSP, etc.), Flanged, Welded
4. Working Pressure: Up to 10,000 psi (689 bar)
5. Temperature Range: -200°C to 800°C (-330°F to 1472°F)
6. Spray Angle: 0° to 120°
7. Flow Rate: 0.1-1000 GPM (0.4-3785 L/min)
8. Finish: Polished or passivity

Common Specifications

1. Certification: ISO 9001, UL
2. Standards: ASTM, ASME, DIN
3. Applications: Fire Protection, Industrial Cleaning, Chemical Processing, Oil and Gas, Water Treatment.

ANNEXURE -V(A)

DESIGN SPECIFICATIONS OF A 50-METER MANILA ROPE:

Here are the design specifications for 0a 50-meter Manila rope commonly used in applications such as climbing, marine activities, rigging, and construction:

a. Material:

Manila hemp (Abaca fiber): Natural fiber obtained from the leaves of the Abaca plant, known for its strength, flexibility, and resistance to water and abrasion.

Twist Construction: Typically made using a three-strand twist for enhanced strength and durability.

b. Length:

50 meters (164 feet): Precise length, suitable for various applications like rigging, boating, climbing, or general outdoor activities.

c. Diameter:

Range: Typically available in diameters from 6 mm to 50 mm.

16 mm to 24 mm: For heavier-duty applications, such as climbing or marine tasks.

d. Breaking Strength:

Dependent on diameter. A thicker rope offers higher strength. 16 mm: Around 3500 to 4500 kg breaking strength.

For marine and safety applications, it's critical to choose the right diameter based on load requirements.

e. Weight:

The weight of Manila rope increases with its diameter:

For 16 mm diameter: Approximately 9- 10 kg per 50 meters.

f. Tensile Strength:

Manila rope typically has a tensile strength ranging between 30 MPa to 40 MPa,(4350-5800 PSI) depending on the grade of the fiber and the rope construction.

IS CODE: IS9936:1992

ANNEXURE-V(B)

B) DESIGN SPECIFICATIONS OF A 50-METER COTTON ROPE:

Here are the design specifications for a 50-meter cotton rope, which is commonly used for arts and crafts, indoor decorative purposes, and low-tensile applications like macramé and light-duty tying.

a. Material:

100% Natural Cotton: Soft, flexible, and environmentally friendly. Cotton rope is typically unbleached or un dyed for a natural appearance, but colored options are also available.

Twist Construction: Usually manufactured using a three-strand twisted or braided construction for better handling and aesthetics.

b. Length:

50 meters (164 feet): Standard length for general use in crafts, decoration, or light-duty tying.

c. Diameter:
Cotton ropes come in various diameters depending on the application:
12 mm to 16 mm: Used for more substantial load-bearing tasks or larger decor projects. Larger diameters can be used for heavier crafts or aesthetic rope designs.

d. Breaking Strength:
Low tensile strength compared to synthetic or manila ropes. Cotton rope is not intended for heavy-duty tasks.
For a 12 mm diameter rope: Breaking strength around 800-1,200 kg For a 16 mm diameter rope: Breaking strength around 1200-1800 kg
Cotton ropes are generally used for light-duty applications and are not suitable for climbing or load-bearing purposes.

e. Weight:
Cotton is relatively lightweight compared to synthetic or natural fibers like hemp or jute. 12 mm diameter: Approximately 4-6 kg for 50 meters.
16 mm rope approximate weight: 6-7.5 kg for 50 meters.

IS CODE: IS9936:1992

ANNEXURE -V(C)
DESIGN SPECIFICATIONS OF A 50-METER NYLON ROPE:

Here are the design specifications for a 50-meter nylon rope, which is widely used for climbing, boating, construction, and general-purpose applications due to its high strength, durability, and elasticity:

a. Material:
100% Nylon: A synthetic fiber known for its high tensile strength, elasticity, and abrasion resistance.
Type of Construction: Available in two main types:
Twisted (three-strand twist): Provides good strength and flexibility, commonly used for general-purpose applications.
Braided: Offers a smoother surface, with better handling and reduced twisting under load, often used for climbing and more technical applications.

b. Length:
50 meters (164 feet): Standard length, suitable for outdoor activities like climbing, rescue operations, or general-purpose use.

c. Diameter:
Typically available in a range of diameters depending on the application:
12 mm to 16 mm: Suitable for moderate to heavy-duty tasks such as towing, boating, or climbing.

d. Breaking Strength:
High tensile strength is a key feature of nylon rope, with breaking strength increasing with diameter:
12 mm: Average breaking strength: 3,500-4,000 kg 16 mm: Average breaking strength: 7,000-8,000 kg

The strength can vary based on construction and usage (twisted or braided).

e. Weight:

Nylon is relatively lightweight for its strength:
12 mm diameter: Typically 3-4.5 kg for 50 meters.
16 mm diameter: Typically 7--10 kg for 50 meters. Larger diameters will be proportionally heavier.

IS CODE: IS9936:1992

ANNEXURE-VI
SPECIFICATIONS OF HARNESSES

a. Material:

- Webbing: Made from high-strength materials like nylon, polyester, or Dyneema. These materials provide durability, strength, and resistance to wear, UV, and moisture. Buckles: Made from aluminum alloy, steel, or reinforced plastic, depending on the type of harness and its use.

b. Design and Types:

- Full-body Harness: Primarily used for fall protection and rescue operations, covers the chest, waist, and legs.

Seat/Climbing Harness: Features a waist belt and leg loops used in rock climbing, caving, and mountaineering.

- Work-positioning Harness: Designed to allow hands-free work while suspended.

Dorsal D- ring for Fall Arrest, Sternal D Ring at Chest Level & Ventral D Ring at Waist level for Rope Access and 2 Lateral D Rings for wok positioning.

- Adjustable Shoulder, Thigh & Waist Straps
- An Ideal combination of fall Arrest, Work Positioning, Rescue and Rope Access Applications
- Soft padding on Shoulders, Waist & Leg Straps for Extended comfort.

c. Weight Capacity:

General Standard: Harnesses must have a weight capacity ranging from 100 kg to 150 kg. In climbing and fall arrest systems, they should withstand a 15 KN (kilo Newton) force.

d. Padding and Comfort:

Leg loops, waist belt, and shoulder straps: Should have ergonomic padding to ensure comfort during prolonged use, especially in fall protection or climbing harnesses.

Breathable Fabric: Often used in high-contact areas to reduce sweating and improve comfort.

e. Adjustment and Fit:

Adjustable Straps: Must include multiple adjustment points to fit users of various sizes securely. Typically, these adjustments are found on the waist, chest, and leg loops.

Quick-release Buckles: Feature on high-end harnesses to enable quick adjustments and easy donning/doffing.

f. Safety Features:

Attachment Points (D-rings): Harnesses must include strong attachment points for connection to ropes, lanyards, or carabineers. A full-body harness often includes:

Dorsal D-ring: Located on the back for fall arrest.

Sternal D-ring: For frontal attachment, often used in climbing harnesses.

Lateral D-rings: On the sides for positioning in work safety harnesses.

Color-coded Straps: Different colors for different sections of the harness (e.g., shoulder, waist, leg) to simplify donning

IS CODE: IS3521:1989
EN 361: 2002
EN 358: 1999
EN 813 : 2008

(ANNEXURE-VII)

SPECIFICATIONS OF A SCOOP STRETCHER:

The design specifications for a scoop stretcher, also known as a split stretcher, focus on safety, ease of use, and ergonomic considerations. Scoop stretchers are specifically designed to lift and transport patients with minimal movement, particularly in cases of suspected spinal or pelvic injuries. Below are detailed design specifications:

a. Material:

Lightweight and Strong: Typically made from aluminum alloy or high-density polyethylene (HDPE) to ensure the stretcher is both lightweight and durable.

Non-corrosive: Materials must be resistant to corrosion and suitable for use in diverse environments, including emergency, marine, and outdoor conditions.

Radiolucent: The stretcher should be made from radiolucent materials, allowing X-rays, CT scans, or MRI scans to be performed without needing to move the patient off the stretcher.

b. Dimensions:

Adjustable Length: Scoop stretchers are typically adjustable to accommodate different patient heights. Standard length ranges from 160 cm to 210 cm.

Width: The stretcher should have a width of approximately 42 to 50 cm, providing enough space for different body types.

Thickness: Around 7-10 cm, keeping it compact while maintaining strength.

c. Weight and Load Capacity:

Weight: The stretcher should weigh between 6-10 kg, ensuring portability and ease of use by first responders.

Load Capacity: It should support a minimum of 150 kg to 180 kg to accommodate various patient sizes, particularly in trauma scenarios.

d. Split Mechanism:

Two-Piece Design: The stretcher is split into two longitudinal halves, which allows rescuers to position the halves under the patient with minimal movement.

Quick Locking System: A secure locking mechanism should enable the stretcher to be quickly assembled once the patient is positioned.

Folding Capability: For ease of storage and transport, the stretcher should be foldable or have a compact design when not in use.

e. Handles:

Multiple Carrying Handles: The stretcher should have at least 6-8 ergonomically designed handles for easy lifting and carrying. These handles must be positioned to allow even weight distribution among multiple rescuers.

Anti-slip Design: The handles should have a textured or rubberized grip for secure handling, even in wet or slippery conditions.

ISO 5362:2006 - Emergency medical equipment - Scoop stretcher

ANNEXURE-VIII-A

PETROL POWERED CHAIN SAW FOR WOOD (LARGE)

General Specification:

Parameter	Specifications
Petrol Engine	Air Cooled 2 Stroke, Single Cylinder
Displacement	70 to 75 CC
Bar Length	58 to 63 Cm
Weight (Drive Head)	Not exceeding 7.0 Kg.
Fuel Tank	Minimum 700 ML
Oil Tank	Minimum 350 ML
Carburetor	Diaphragm Type
Chain Lubrication	Automatic Oil Pump
Magneto	Flywheel Magneto ,CDI Igniter
Starter	Recoil Starter
Idle Rpm	2700+-500
Rated Power	3.8 to 4.5 KW
Max chain Speed	Around 21 mt./Sec
Other Devices	Front Hand Guard, Throttle Tragic ,Chain Brake,Anti-Vibration Device
Cutting Chain Details	Carbide tipped chain with 3/8” pitch with heavy duty tie straps and tempered rivets.
Application	To cut Large Tree, Branches, Namely Plank, Door, Windows,Etc……

ANNEXURE-VIII-B

Electrical Chain Saw Specifications:

1. Power Source: Electric (AC)
2. Voltage: 230V/50Hz (India)
3. Power Rating: 2000-3000W

4. Current: 8-12A
5. Weight: 4-7 kg
6. Length: 60-90 cm
7. Width: 20-30 cm
8. Height: 20-30 cm

Chain Saw Specifications:

1. Chain Type: Oregon/Skip-tooth/Rip-cut
2. Chain Length: 30-40 cm (12-16 inches)
3. Chain Pitch: 3/8" or 0.325"
4. Chain Gauge: 0.05-0.063"
5. Cutting Speed: 15-20 m/s
6. Chain Tensioning: Manual/Automatic
7.Cutting Chain Details: Carbide tipped chain with 3/8” pitch with heavy duty tie straps and tempered rivets.

Motor Specifications:

1. Motor Type: Induction/Universal
2. Motor Speed: 3000-6000 RPM
3. Motor Protection: Overload/Overheat protection

Safety Features:

1. Chain Brake: Manual/Automatic
2. Safety Switch: Yes
3. Hand Guard: Yes
4. Chain Catcher: Yes
5. Vibration Dampening: Yes

Additional Features:

1. Adjustable Handle: Yes
2. Tool-less Chain Tensioning: Yes
3. Oil Tank Capacity: 100-200 ml
4. Automatic Oiling System: Yes
5. LED Light: Optional

Standards:
Conforming standards for the item EN/DIN/US/Equivalent standards
Application:

1. Wood cutting (logging, pruning, trimming)
2. Gardening
3. Landscaping
4. Carpentry
5. DIY project

Annexure-IX (A)
Mega Phone - Ahuja

Specifications of Mega Phone		Ahuja Mega Phone	Image
Type	:	Outdoor	
Model	:	AM-25DP	
Range	:	Approx.400m (Siren 500m)	
Microphone Included	:	Unidirectional	
Portable	:	Required	
Suitable For	:	Public Address, To Control the crowd & Announcements	
Power Output	:	20W Rated/25W Max	
Dimensions	:	14 x 9" / 35.6 x 22.9 cm	
Maximum Sound	:	20 dB	
Battery Type	:	UM-3 (AA) Pencil Cells & Car Battery (12-14V DC) operation	
Power Source	:	Pencil Cells & Car Battery	
Battery Life	:	20 Hours, Continuous	
Warranty Summary	:	01/Year	

Annexure-IX (B)
Walkie Talkie sets Kenwood vs Motorola

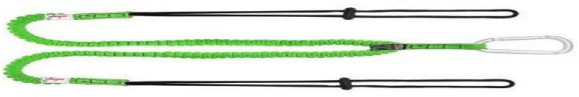
Brand	:	Kenwood		Motorola		Image
		UHF	VHF	UHF	VHF	
Model	:	NX 420	NX3220	MTX 960	XIRP 8668	
Frequency Range	:	4 Km	4 Km	4 Km	4 Km	
No of Channels	:	32 Channel	32 Channel	32 Channel	32 Channel	
Type	:	Wired with Earpiece	Wired with Earpiece	Wired with Earpiece	Wired with Earpiece	
License Requirement	:	License Free	License Free	License Free	License Free	
Noise level	:	60 dB	60 dB	40 dB	40 dB	
Voltage	:	7.4 V	7.4 V	7.4-V	7.4-V	
Color	:	Black	Black	Black	Black	
Weight	:	283 grms (With Antenna & Battery)	283 grms (With Antenna & Battery)	265 grms (with Antenna & Battery)	265 grms (with Antenna & Battery)	
Dimension	:	115 x 62 x 37 mm	115 x 62 x 37 mm	100 x 52 x 32 mm	100 x 52 x 32 mm	
Frequency Mode	:	2000 Mah	2000 Mah	2000 Mah	2000 Mah	

Annexure-IX (C)

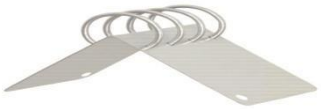
INFRASTRUCTURE ROPE RESCUE HARD DRILLS

RAKSHAK KIT (PREMIUM)				
Item Name/Code	:	HSN Code – 63072090 PN667(P) INCLUDES		
Item Description	:	Code & No of Items	Item Specifications	Image

Tower Harness	:	PN56 (P) (1 NO)	Material : Sit harness with padded leg strap & sholder strap Color : Black & Green Weight : 2 Kg Features : One D ring for dorsal one for ventral, one for sterna & two rings for sides attachment. Any lanyard can fit with it.	
Grip Descender	:	PN401 (PN113) (1 NO)	Item Model number : PN 401 Number of Memory Sticks : 1 Item Weight : 700 g Product Dimensions : 4.6 x 10 x 21.6 cm; 700 g Item Height : 21.6 Centimeters Item Width : 10 Centimeters	
Steel Quarter Turn locking Karabiner	:	PN111 (2NO)	Material : Steel Gate opening : 16 mm Minimum breaking strength : 25 kN Net Weight : 195.0gm Finish : Silver/golden yellow galvanized	
Openable Protective Sleeve		(PR 02) (4 NO)	The width of PR02 is : Open : 130mm and Folded: 50mm Can be opened/closed with the help of Velcro tape stitched along the length Standard length : 55cm	

Twin tools Lanyard	:	TL02 (N) (1 NO)	Material : Polyester Weight : Approx 85 Grams Color : Black and Green Product Code : Mincon-KaramTwinToolLanyard-TL02	
Galvanized steel Rope Grab	:	(PN112) (C) (1 NO)	Material : Alloy Steel Weight : 1035 gms Color : Golden Yellow Size/Capacity : Rope Anchorage Line (14 Mm-16 Mm Dia)	
Karamental Rope	:	(121) (2 NO)	Type : Karamental Rope Weight (Kg) : 3kg Material : polypropylene Size :14 mm	

Easy Seat	:	(1 NO)	Item Weight : 2 kg 100 g Product Dimensions : 38.1 x 12.7 x 7.6 cm; 2.1 kg Item Height : 7.6 Centimeters	
Parapet Anchor - SA11	:	(2 NO)	Certifications : ANSI Z 359.1:2007, EN 795:2012 TYPE B Weight : 9 Kgs Material : Galvanized Steel Size : Width Adjustable from 60mm to 360mm Color : Golden Yellow	

Edge Protector - ARC02	:	(1 NO)	Material : Stainless Steel Material Thickness : 2.5-5 mm Type : Edge Protector Surface Finish : Chrome Coated Protects the rope from abrasion against an edge The edge ring guides on the angle of the edge protector prevents different anchorage lines from getting entangled over the edge	

Karam HS61 Hand Gloves	:	(1 NO)	Coating Material : Embossed Latex Coating Color : Blue Liner Material : HPPE Grip : Textured palm dipped Cuff Style : Straight with overlock thread beaded cuff area Thickness : 13 gauge Length : M(240mm), LG(250mm), XL(260mm) (±3%)	
Deluxe Universal Kit Bag	:	BG63	Size : 475x230x365 mm Suitable For : All the Purposes & Requirements of Personnel Engaged in Maintenance Jobs at Height	

Kern mantle rope anchorage Line	:	(PN 950)	Made of Polyester kernmantle rope of dia : 12mm One side loop; other side stop knot (also available with both side loops) Length : 50mm	
Rescue Chair	:	(IMP 007)	Material of Rescue Chair : Fiber Glass Metal Components Material : High Strength Steel	

BREATHING APPARATUS (B.A.SET)
TECHNICAL SPECIFICATIONS
PART-I

1. Purpose. The Portable High Pressure Breathing Air Compressor is required for charging of Air diving Sets and storage BA Set cylinders with Breathing Air to support diving operations.

2.Functionality. The equipment should be Man-Portable and capable of charging High Pressure Breathing air cylinders up to a working pressure of 300 bars.

PART II
OPERATIONAL CHARACTERISTICS ANDFEATURES OF PORTABLE H.P AIR BREATHING COMPRESSOR

3. Principal Components of Equipment: - The High-pressure Air compressor must incorporate the following: -

(a) Compression Unit (3-stage) with working pressure of 300 bars. Test pressure not less than 350 Bars.

(b) Diesel Driven Compressor.

(i) Drive -V belt drive.

(c). Flexible connection and charging hoses: Two outlet hoses should be provided with adaptors for charging underwater breathing apparatus with separate vent valves.

(d) Instrumentation: All gauges and instruments supplied are to be calibrated & supplied with calibration certificates, which would be valid during commissioning of the compressor. Calibration procedure for all gauges is to be provided.

(e) Repair kit/Tool kit

(f) Air cooling system

(g) Test Kits if any

4.General Dimensions:

(a) The compressor should be a completely assembled unit with Compressor and Diesel engine mounted on the same base frame. The compressor and its purification system shall be designed for 110 percent of maximum discharge pressure or pressure relief valve set pressure, whichever is higher.

(b) Space constraints: Ease of operation and maintenance is to be ensured while designing the layout of the system components. The limiting dimensions for the equipmentis as under, and the supplier is to indicate the parameters in the following format: -

Charging Rate	Length	Breadth	Height	Weight	Filtering Capacity
3-4 cfm	90 cms	55 cms	55 cms	70 kgs	80 m3

** cfm- Cubic feet per minute.

5.General Features/ Characteristics: - The general characteristics should be as

follows: -
(a) Design should be such that there is minimum wearing of components for ease of maintenance.

(b) Lubrication system should be such that air being pumped is totally safe from contamination. No hand priming of the lubrication system is to be required.

(c) Filtration should take place throughout the system, at intake, during compression and at final point of use to ensure highest levels of purity of gas delivered.

(d) Eco friendly condensate collection.
(e) To be user friendly for operation and maintenance.
6. Safety Features: -
(a) No running parts should be exposed.
(b) Pressure relief valves to be provided for each stage.
(c) Every reasonable and practical effort shall be made to minimize equipment noise through sub-assembly and component design. All parts of the equipment and accessories are to be designed to ensure resistance to fracture distortion or misalignment due to forces of vibration.

(d) Suitable change over arrangement should be made for the compressor to deliver output pressure equal to the test pressure, for pressure testing of the system piping after installation/ periodic repair/testing.

7.Environmental Conditions: - The equipment should not require a controlled environment for stowage and should bear temperature ranges of +5 to 45 °C and 90% humidity. It should withstand air contamination through oil, salt and other contaminants.

8.Purity of air quality: - As per international standards conforming to DIN 3188/BIS/EN or equivalent standards. The air purity standards required for discharged air are as follows: -

(i) Odour- Nil
(ii) Carbon Dioxide - less than 500 ppm
(iii) Carbon Monoxide - less than 15 ppm
(iv) Oil Contents - less than 0.0015 mg/its
(v) Moisture Contents - less than 0.5 gm/m3
(vi) Oxygen Contents-21% plus or minus 0.5%

9.Documentation: - The following documents are to be provided:
(a) Installation, Operation, maintenance manual in English language.
(b) Equipment parts list with vendor part numbers for all spares including recommended Base & Depot spare list for one year.

(c) Arrangement drawings.
(d) Paper particular, company part numbers with description of all components of the equipment is to be provided.

PART III

MAINTENANCE

10. Maintenance and Product Support:

(a) On Board Maintenance: - All the items should afford easy maintenance, by replacement of consumable spare parts or by way of replacement with new items. The equipment should be supplied along with special tool kit and test equipment as required for the same.

(b) Base and Depot Spares/ Stocking: - Manufacturers Recommended List (MRL) of Base and Depot (B & D) spares and On-Board Spares (OBS) must be provided with cost. Adequacy and continued availability of spares/ replacement of the item (depending upon the life span) must be ensured prior to placement of orders for this equipment.

(c) Performance Monitoring: - The facility/method to determine a drop in the equipment performance relative to the laid down standards at the time of supply should be provided.

(d) Product Support: - The OEM/ supplier should support each item of the equipment supplied, for a period of its life span. Any obsolescence of the component/ spare/ item needs to be intimated by the firm, well in time, to enable stocking of spares by the AP State Disaster Response and Fire services. The firm should also recommend/ offer suitable substitutes/ replacement for such components. In addition, up- gradation/ modification to the equipment, resulting in enhancement in the performance should be intimated and offered to the AP State Disaster Response and Fire services...

(e) AMC: - The firm should also indicate their willingness to undertake AMC (which would be separate contract on expiry of the warranty period) either directly or through their authorized Reps in India.

11.Testing Procedures: - The equipment should adhere to the environmental test conditions & proof thereof as per international standards. The supplier should agree to trials of the equipment by the AP State Disaster Response and Fire services. at 'No Cost No Commitment basis. All relevant certificates relating to HP pipes, valves, gauges, purifier cartridge and air sample report from a Govt./ International recognised agency must be submitted.

ANNEXURE -X-B & XXI-B

High Pressure Breathing Air Compressor 100 lpm Motor Driven 300 bar

Technical Specifications

1) The compressor intended for purchase should be light weight, portable and weighing around 50 kg.
2) It should have FAD (Free Air Delivery) of not less than 100 Litres Per Minute.
3) Operating pressure should be of 300 bar with final safety relief valve setting at 330 bar.
4) Final stage safety relief valve should be embossed with CE marking followed with notifying body identification no. on the same.
5) Compressor Block should be Air Cooled, V Belt Driven and reciprocating type with 3 Cylinder / 3- stage combination only.
6) Permissible ambient temperature range +5 to +45°C.
7) Compressor should be dynamically balanced.
8) Cylinders should be plasma nitrated and plateau honed (double honing process) to increase the life.
9) 3 phase motor driven engine to run the compressor for filling the BA cylinder with 300 & 200 bar pressures.
10) Stainless steel intercoolers should be provided after each stage of compression.
11) Aftercooler should be provided after the final stage of compression with fins on the surface to provide better cooling efficiency.
12) One sealed safety relief valve should be provided per stage.
13) Oil & Water Separator should be provided for all stages (except first) with manual drain.
14) Compressor should also be provided with 01 no filling hoses with 1 m length Thermoplastic filling Hose with kink protection and pressure gauge mounted filling valve with self-venting.
15) Filtration system should consist of Filter Set with Activated Carbon & Molecular sieve with minimum filter processable capacity of minimum 130m3. Safety bore should be present in the final stage filtration chamber to prevent pressure built up in the absence of final stage filter cartridge due to human error.
16) Final air quality after the filtration system should comply with EN-12021:2014 Breathing Air Quality standards/norms.
17) Pressure Maintaining Valve (PMV) along with in-built Non-Return (NRV) should be supplied at downstream of the purification system to increase the efficiency of the purification system by maintaining a positive back pressure.
18) In built NRV should allow refilling/topping up of partially filled cylinders to desired pressure.

Compressor system should be so designed that the complete oil change frequency should not be less than 2000 hours or 02 years whichever comes earlier.

19) All rotating/moving parts should be covered with high strength UV resistant plastic covers (noncorrosive).

20) Hoses used for the quoted model are having capability to withstand bursting pressure of 1700 bar and operating pressure of 425 bar. The hoses are capable to withstand temperature range from - 40deg cent to 100 deg cent.

Prequalification criteria as mentioned below should be strictly adhered to, absence of which offer shall be liable for rejection:

1) OEM whose product is being offered against this tender enquiry should have its own 100% subsidiary office in India.
2) Third party certificate from internationally reputed agency certifying compliance to Pressure Equipment Directive (PED) 2014/68/EU Annex III, Module H &HI for scope of design & manufacture with quality assurance of pressure vessels, pressure accessories, safety valve assemblies and welded piping for air up to 550bar. The certificate should also have certificate no., certificate issue date, validity date and complete address with phone nos. and email address for certifying agency. The certifying agency should be any International or Government agencies of Manufacturing Country of the quoted product & spares.
3) Third party certificate from internationally reputed agency certifying compliance to breathing air quality as per EN12021:2014 and purity class as per ISO 8573-1:2010 class 2 and the Manufacturer's name printed on the certificate. The certifying agency should be any International or Government agencies of same Manufacturing Country of the quoted product/spares.
4) Technical data sheet & compliance matrix of specifications has to be signed and stamped by the OEM with complete address with phone nos. and email address.
5) Bidder should have PTR of supplying the quoted model to any Indian Government Organization in last 3 years. Details of the organization to be provided.
6) If the Bidder is not the OEM, then Bidder should have trained service personnel with 10 years of experiences (training provided by OEM competitive Service Personnel) to take care of after sales services.

7) Bidder has to provide declaration in OEM's letter head for confirming of spares/service availability for next 15 years from the date of supply and the same should be from the same country where from the quoted model will be supplied. OEM has to confirm the same in their letter head with contact details with sign, stamp for further verification. If Bidder/OEM failed to maintain the same then OEM and Bidder (in case the bidder is not OEM) will be black listed.

8) Bidder has to certify that he has got trained service personnel for the quoted model (training provided by the authorized Service personnel and his name with contact details to be mentioned along with sign and stamp). IF Bidder is not OEM, then OEM concerned Service Personnel has to provide the certificate in their letter head. This is required for the after sales service of the product.

ANNEXURE - XI

IX Thermal imaging cameras for fire detection and victim location			
1.	Thermal imaging camera	**3.17 Thermal Imaging Camera** Approximate Cost: Rs. 10 Lakhs **3.17.1 General Specification** ➢ The Thermal Imaging Camera shall be hand held and easily transferable between fire fighters without the removal of protective clothing. ➢ The camera shall remain operational after submersion in water as per IP67 water ingress test. ➢ The thermal imaging camera should be lightweight weighing less than 800 grams ➢ The camera shall be of compact and dimensions not exceeding 8 x 6 x 5 inches (LxWxH) ➢ The camera shall be ergonomically designed and the outer casing be manufactured from Fire retardant tough material like Radel□5100 or equivalent **3.17.2 Performance** ➢ The camera shall use a detector capable of sensing and imaging infrared in the 8 – 14 micron spectral wavelength range. ➢ The camera shall use a Amorphous Silicon (ASi) detector of 160 x 120 pixels or higher ➢ The camera should be automatic in nature without requiring need for adjustments/ focus setting etc ➢ The camera must have the ability to capture, store and download to a laptop/PC minimum 50 images in viewable format. The end user should be able to save download these images onto a PC by simple connection with a USB port. ➢ The camera shall have the ability to provide color mode thermal imaging in at least two modes like firefighter color mode and overhaul mode to facilitate prompt and clear detection of fire and heat ➢ The camera shall have the ability to provide reading for both Spot Temperature as well as live ambient temperature ➢ The camera shall have the ability to provide digital zoom to x2 ➢ The camera shall have an option for removable germanium lens for long term serviceability and facilitating long life maintenance serviceability ➢ The Camera should be able to start promptly within 6 seconds ➢ The camera shall have a single on/off button, with delayed off to prevent ➢ accidental powering off. ➢ The camera should be able to operate for a period of 4 (four) hours using standard Ni-MH rechargeable batteries/ Pack or 2 hours using regular AA batteries under nominal conditions ➢ The camera should be able to show the time and date at the top of the viewing area. ➢ The camera shall have a minimum 2.5 inch LCD display to allow multi-user viewing. **3.17.3 Accessories** ➢ The camera shall be supplied with 1 rechargeable NI-MH batteries, 1 AA cell battery pack, Truck mounted battery charger, neck strap, manual and PC interconnection lead as standard.	 **THERMAL IMAGING CAMERA** **APPLICATION** • Helps to locate victims in Smoke filled, dark and High temperature conditions. • Identifies live victims by measuring the body temperature and displays image on screen. • It can communicate the victim image up to a distance of 1.6 miles. Contd…

TECHNICAL SPECIFICATION FOR TRAILER MOUNTED FIRE FIGHTING PUMP

1. GENERAL REQUIREMENT:

The requirement is for a Trailer Mounted Fire pump which can be used primarily for Firefighting/Dewatering purpose. The Pump shall be so designed that it shall also be possible to engage for Dewatering /Firefighting also, whenever required. Pump shall satisfy the following requirements.

Type: Single stage centrifugal Pump

Fuel: Diesel

Dewatering capacity: Not less than 2400 LPM

Firefighting Capacity: Not less than 1800 LPM @ 7 KG/CM2 pressure

The entire equipment shall be mounted on a single axle 2-wheel trailer for easy surface transportation.

2. ENGINE:

1) The Engine shall be 4 Cylinder four stroke.

2) Engine shall be electric start type with Battery, fitted with Generator/Alternator of sufficient capacity for charging the battery.

3) The Engine shall be water cooled. Radiator shall be provided of sufficient capacity to give cooler operations for extended hours. A closed loop heat exchanger shall be provided along with radiator.

4) An emergency cut-off switch shall be fitted to disconnect the battery from circuit without removing the battery cables from battery.

5) The Engine fuel tank shall be of such capacity to allow running of Pump two hours continuously at the rated output. It shall be provided with an opening of size 50 mm diameter (minimum) located at a suitable position for easy refilling and checking the contents.

6) The pump shall be so designed that the Engine exhaust discharge shall be on the opposite side of the Pump suction/operating side. The exhaust should be so directed as to prevent damage to accessories of the pump or causing inconvenience to operator or to the trailer tyres.

7) Considering all the impact loads of rough operating site conditions, the overall design of trailer shall be heavy duty type. Engine & Pump both shall be mounted on heavy duty anti- vibration mounts to have vibration free operation.

3. TRASMISSION:

1) There shall be flexible coupling provided in transmission to take care of jerk & impact loads.

2) Pump shall be directly coupled to engine flywheel through flexible coupling.

3) Design of coupling shall be as compact as possible.

4. PUMP:

1) Pump capacity shall not be less than 2400 LPM for dewatering.

2) For firefighting, pump capacity shall not be less than 1800 LPM at 7 kg/cm2, when tested from 3 meters suction height at NTP conditions (AS per IS: 944).

3) The Pump unit shall consist of a single stage Centrifugal type coupled with a compressed ignition internal combustion diesel engine mounted on a tubular mild steel cradle with a trailer that can be detached.

4) Pump shall have 1 suction inlets of size not less than 100 mm with British Standard Round threads as per IS 902 with internal strainer & blank cap. The strainer shall be readily removable type.

5) Pump shall have two delivery valves with 63mm female instantaneous delivery couplings and Blank caps.

6) The Pump shall be designed to have easy access to the Impeller with the outer face carrying suction, delivery and priming device etc. The shaft shall be supported by an antifriction bearings and Pump fitted with a self-adjusting mechanical seal. A drain valve shall be provided at the bottom of the Pump casing/volute.

7) The design of pump shall be such that it shall be able to carry external grit of size up to 12 mm without damaging any part of pump.

8) Impeller shall be dynamically balanced and the Pump shall show no leakage when subjected to a hydraulic pressure of 15 kg/cm2.

9) Pump casing shall be made of Gunmetal.

10) Pumps impeller shall be made of Stainless steel, delivery outlet valves shall be made of Light aluminum alloy. Shaft shall be made of stainless steel. Bearing housing shall be made of cast iron. All the parts, nut-bolts etc of pump which comes in water contact shall be made of anti-corrosive material.

11) The Assembly of the Pump and engine shall be as compact as possible and the engine & pump should be mounted on anti-vibration mountings so as to reduce vibration to minimum.

12) Acceptable make for the trailer pump shall be Rosenbauer / Zigler / Firefly.

5. PRIMING SYSTEM

1) The primer of the pump is fully automatic Reciprocating "PRIMATIC" Priming system, capable to lift the water from 7 mtrs.

2) The primer is made of Stainless steel and fully automatic in action.

3) This eliminates the need for any action on part of pump operator. (This priming system is not having any clutch cone assembly, crank shaft, connecting rod, worm gear, manual operated engage / disengage lever.) The eccentric cam will be fitted on pump's main shaft & through this cam; the primer pistons will be operated.

4) The primer will disengage automatically at a pump pressure of 1.5 to 2.0 bar.

6. TRAILER & ENGINE COVER

The pump shall be mounted on a Trailer for transportation purpose. The Trailer should satisfy the following.

1) The Trailer chassis frame shall be made of suitable mild steel sections. It shall have 2 wheels & single axles.

2) Heavy duty semi-elliptical Leaf spring type suspension shall be provided.

3) Heavy duty tyres of 600x16 size 6 ply of reputed make would be provided.

4) The whole unit shall be compact and the Pump & engine shall be so mounted as to bring Centre of gravity as low as possible.

5) Ground clearance at the lowest point of axle shall not be less than 230 mm.

6) Efficient hydraulic over-run braking shall be provided on both wheels.

7) Two handles (Man handling bars) of mild steel shall be provided at the front of the Trailer frame. The handles shall be so designed that it can be folded and secured along the frame when not in use.

8) Two jack legs in the rear and two in the front capable of being lowered into position and adequately secured to provide a suitable base for the unit, when pumping or standing unattached, shall be provided. The legs shall have 200 mm round mild steel plates, dished upwards, and welded to the base of the pipe legs to prevent penetration into the earth when standing unattached. The legs shall be capable of being positively locked in the 'housed' position.

9) Towing eye of minimum 75 mm internal diameter and a height adjustable draw bar shall be provided for the unit. The towing bar should be fitted with heavy duty springs both at the front and rear to absorb jerks. The shank shall be adequately machined with adequate radius at the shoulders.

10) Mudguards for all Trailer Wheels shall be provided to prevent mud and water entering the unit, while running. Provision of keeping suction hoses, adequately secured, shall also be made in the Trailer with clamps.

11) Well louvered engine cover shall be provided. Doors of canopy shall have sufficiently size to carry out necessary maintenance activity without any obstruction. There shall be filling and drain ports of suitable size for Engine oil and coolant.

12) There shall be provision in the trailer to place the tool box in safe and secured manner

7. CONTROL PANEL:

Pump control panel shall have the following facilities.

a. Throttle control

b. Primer control.

c. Ignition Interrupter Switch.

d. Pump Compound Gauge (-1 to 9 kg/cm2)

e. Pump Delivery Pressure Gauge. (0 to 21 kg/cm2)

f. Engine Oil pressure Gauge.

g. Engine cooling Water temperature gauge.

h. Engine Battery condition Indicator/meter.

i. Flood light.

j. Panel Board light.

k. Run time meter

8. TESTING:

Pump shall be endurance tested for 4 continuous hours at rated duty point of 1800 LPM at 7 kg/cm2 at NTP conditions. Suction height shall be 3 meters from the center of pump impeller, as per IS 944. During the test, engine coolant, engine oil or pump oil shall not be changed. Engine cooling water temperature shall not exceed the permissible limits. The cost of consumables for the test shall be borne by the supplier.

9. OVERALL DIMENSIONS:

The overall dimensions shall not exceed L x W x H - 2900 mm x 1600 mm x 1700 mm. The wheel track of trailer shall be not more than 1.6 meters. Weight of the unit without accessories shall not exceed 1200 kg.

10. EQUIPMENT:

The following equipment shall be provided with the unit.

1. 100mm dia. suction Hose of length 4.5 meters, each fitted with stainless steel suction Hose coupling. - 02 Nos

2. Suction Wrenches. - 02 Nos.

3. Metal Strainer 100mm (SS) - 01 No.

4. Basket Strainer for 100mm dia. with canvas cover – 01 Nos.

5. A tool kit comprising of all essential tools required for maintenance of the Pump– 01 Nos.

Instruction Book including both operating and normal maintenance procedures shall be provided for the guidance of the user. The Book shall include an item wise and illustrated spare parts details giving reference No. of all parts. Description shall be there in English language.

11. MARKING:

The pump Unit shall be clearly and permanently marked (embedded) with the following information.

1. The output capacity of Pump in LPM.
2. Manufactures Name and Trade Name.
3. Weight of the Pump set.
4. Year of Manufacture.
5. Sl. No. of the Pump.
6. Engine No.

12. PAINTING & OVERALL WORKMANSHIP

Overall workmanship shall be of good quality. Trailer & base frame shall be painted in black color. Canopy shall be powder coated in Fire Red color. Pump shall be painted in red color.

13. Terms & Conditions for Trailer Fire Pump:

1. Bidders must upload the authorization from the original equipment manufacturer in the bid documents.
2. Bidders must submit technical literature / catalogue along with the offer.
3. The Fire pump installed on trailer assembly must be Firefly make & CE certified.
4. All offered items shall be brand new, unused and free from any defects and ready to use condition.
5. The unit shall be designed in such a way that there is easy access / approach for maintenance of the components (engine, pump, transmission etc.) of the equipment available.

ANNEXURE -XIII

PUMP MODEL MFV-MP-1020 WITH PRIMATIC (Reciprocating piston) PRIMER (CUT SECTION)

1.PUMP CASING: -

- FUNCTION: The casing that receives the fluid being pumped by the impeller, maintaining the velocity of the fluid.
- SPECIFICATIONS:
  - TYPE - Volute
  - MOC - Light Aluminium Alloy
  - FLOW TYPE – Radial flow

2. IMPELLER: -

- FUNCTION: The impeller increases the fluid's velocity and pressure and directs it towards the pump outlet.
- SPECIFICATIONS:
  - TYPE – 1. Low pressure impeller is vortex type.
    2. High pressure impeller is regenerative type.
  - MOC – 1. Low pressure impeller made up of Aluminium alloy and dynamically balanced.
    2. High pressure impeller made up of Stainless Steel.

3. SHAFT: -

- FUNCTION: Transfer power to the both low pressure and high-pressure impellers.
- SPECIFICATIONS:
  - TYPE – stepped
  - MOC – Stainless Steel (SS-431)
  - ROTATION SPEED – 3600 rpm.

4. DELIVERY MANIFOLD: -

- FUNCTION: Distribution of fluid from a single source to multiple outputs.
- SPECIFICATIONS:
  - OUTLETS – Four delivery outlets
  - MOC – Aluminium alloy.

5. BEARINGS: -

- FUNCTION: The Support shafts and enable smooth rotations.
- SPECIFICATIONS:
  - TYPE – Ball/Roller bearing
  - MOC – Steel Or better
  - LUBRICATION – Oil bath type

6. BEARINGS HOUSING: -

- FUNCTION: Encase internal components, provides protection and support.
- SPECIFICATIONS:
  - MOC – Aluminium alloy/Cast Iron.
  - FINISH – Corrosion resistant coating.

7. SEALS: -

- FUNCTION: Prevent fluid leakage and protection against contaminants

- SPECIFICATIONS:
    - TYPE – Self adjusting Mechanical carbon seal
    - MOC – Carbon/Stainless Steel.
    - DESIGN – Custom fit to ensure airtight sealing.

8. SHIFT MECHANISM: -
- FUNCTION: Changeover low to high pressure.
- SPECIFICATIONS:
    - TYPE – Manual operated.
    - CONTROL – Operated from single lever provided at HP manifold.
    - MODE – Single lever actuation.

9. SAFETY SYSTEM: -
- FUNCTION: Controls the high pressure and temperature within specified limits.
- SPECIFICATIONS:
    - TYPE – Automatic.
    - SOURCE – 1. Provide pressure relief valve
    - 2. Provide thermal relief valve
    - OPERATE –1. 45 kg/cm^2 to 55 kg/cm^2 under closed discharge condition.
    - 2. 50 Degree to 55 degrees under closed discharge condition.

10. PRIMER: -
- FUNCTION: It is use to remove air from the pump and suction line and lift the water up to pump suction eye.
- SPECIFICATIONS:
    - TYPE – Twin piston Reciprocating type.
    - MOC – Stainless Steel.
    - LUBRICATION – Self lubrication system.
    - OPERATE – Up to 7 meters not more than 24 seconds at NTP condition.
    - OPERATING SPEED – 2400 rpm.

11. DELIVERY VALVE AND COUPLING GROUP: -
- FUNCTION: Control output flow.
- SPECIFICATIONS:
    - TYPE – Screw Dawn type.
    - NO OF VALVES – 2 No’s of 63 mm with pressure relief arrangement.
    - DELIVERY COUPLING TYPE – Instantaneous type as per IS 901.

12. HP FILTER HOUSING: -
- FUNCTION: To provide filtered water to HP impeller from HP filter and to generate high pressure water in manifold.
- SPECIFICATIONS:
    - MOC – Aluminium alloy.

13. SUCTION GROUP: -
- FUNCTION: The supply water up to pump casing.
- SPECIFICATIONS:

- MOC – Aluminium alloy.
- DIAMETER – 100 mm with round threads as per IS 902.
- ATTACHEMENT – Removable Strainer.

ANNEX-XIV
TECHNICAL SPECIFICATION

Engine Cooling System Cut-Section Model
(Training Aid for AP Fire & Emergency Services Training Institute)

1. Scope

The bidder shall design, manufacture, supply, and install a full-size Engine Cooling System Cut-Section Model for classroom demonstration and practical training of Fire Service personnel. The model shall clearly illustrate the construction, working principles, coolant circulation, and major components of a heavy-duty diesel engine cooling system used in fire appliances.

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2. Purpose

The cut-section model shall enable trainees to understand:

- Construction of the engine cooling system.
- Coolant circulation path.
- Working of the thermostat.
- Water pump operation.
- Radiator construction.
- Cooling fan operation.
- Expansion tank operation.
- Heat dissipation process.
- Cooling system maintenance.
- Common cooling system faults and troubleshooting.

---

3. General Requirements

The model shall be:

- Industrial training quality.
- Full-size or not less than 75% of actual size.
- Fabricated from actual OEM engine cooling system components or accurately reproduced components.
- Mounted on a rigid steel frame with wheels.
- Suitable for repeated classroom demonstrations.

---

4. Components to be Displayed

The cut-section model shall clearly display the following components:

1. Radiator (cut section)
2. Radiator core
3. Radiator tubes
4. Radiator fins
5. Radiator pressure cap
6. Upper radiator hose
7. Lower radiator hose
8. Water pump (cut section)
9. Water pump impeller
10. Pump bearings
11. Thermostat valve (cut section)
12. Thermostat housing
13. Cooling fan
14. Fan hub
15. Fan belt / serpentine belt
16. Belt tensioner
17. Coolant passages in engine block
18. Cylinder head coolant jacket
19. Expansion tank
20. Coolant reservoir
21. Temperature sensor
22. Coolant temperature switch
23. Heater line (if applicable)
24. Drain cock
25. Hose clamps

---

5. Cut Section

The components shall be precision cut to expose:

- Internal coolant passages.
- Water pump impeller.

- Thermostat valve movement.
- Radiator core construction.
- Engine coolant jackets.
- Flow direction.
- Coolant inlet and outlet.

Cut surfaces shall be:
- Smoothly machined.
- Painted to prevent corrosion.
- Protected with transparent acrylic where required.

---

6. Colour Coding
The model shall use durable colour coding:
- Coolant flow (hot): Red
- Coolant flow (cold): Blue
- Water pump: Green
- Thermostat: Yellow
- Radiator: Silver
- Fan: Black
- Hoses: Black
- Sensors: Orange

Arrows shall indicate coolant flow direction.

---

7. Labels
Each component shall be permanently identified by engraved or printed labels, including:
- Component name.
- Function.
- Coolant flow direction.
- Brief technical description.

---

8. Demonstration Features
The model shall demonstrate:
- Coolant circulation.
- Thermostat opening and closing.
- Heat transfer through the radiator.

- Fan airflow.
- Pressure cap operation.
- Expansion tank function.
- Engine warm-up cycle.
- Cooling cycle.

---

9. Display Stand
The stand shall be:
- Fabricated from heavy-duty mild steel.
- Powder-coated.
- Mounted on four lockable castor wheels.
- Suitable for classroom movement.
- Equipped with a name plate.

---

10. Electrical Demonstration (Optional)
Where specified, the model may include:
- Low-voltage electric drive motor.
- Transparent coolant circulation lines.
- LED indicators for coolant flow.
- Switch panel.
- 230 V AC power supply with overload protection.

---

11. Dimensions
Approximate dimensions:
- Length: 1500–1800 mm
- Width: 700–900 mm
- Height: 1400–1700 mm

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12. Finish
- Powder-coated steel frame.
- OEM colour finish on components.
- Rust-proof treatment.
- Scratch-resistant paint.

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13. Accessories

The bidder shall supply:

- Technical manual.
- Maintenance manual.
- Illustrated parts catalogue.
- Colour poster showing coolant circulation.
- Trainer's handbook.
- Laminated component identification chart.

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14. Warranty

Minimum warranty: 24 months.

The supplier shall replace any defective components during the warranty period without additional cost.

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15. Training

The supplier shall provide one day of on-site training covering:

- Model operation.
- Cooling system principles.
- Preventive maintenance.
- Fault diagnosis.
- Safety precautions.

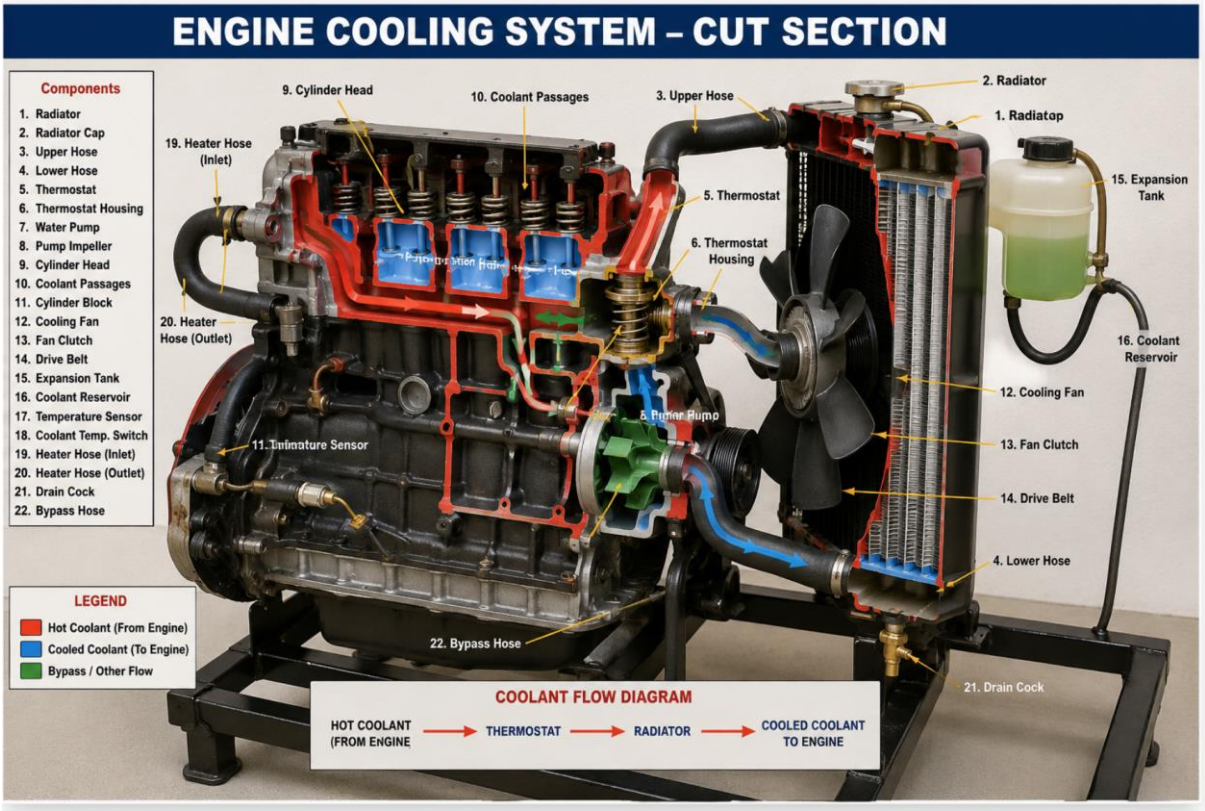
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16. Compliance

The training model shall accurately represent the cooling system of a modern BS-VI heavy-duty diesel engine used in Fire & Emergency Services vehicles and shall be suitable for instructional use in Fire Service training institutes.

This specification is appropriate for procuring a training cut-section display model rather than a functional vehicle component, making it suitable for classroom demonstrations and recruit training in the AP Fire & Emergency Services Department.

Image:


ENGINE COOLING SYSTEM – CUT SECTION
Components
1. Radiator
2. Radiator Cap
3. Upper Hose
4. Lower Hose
5. Thermostat
6. Thermostat Housing
7. Water Pump
8. Pump Impeller
9. Cylinder Head
10. Coolant Passages
11. Cylinder Block
12. Cooling Fan
13. Fan Clutch
14. Drive Belt
15. Expansion Tank
16. Coolant Reservoir
17. Temperature Sensor
18. Coolant Temp. Switch
19. Heater Hose (Inlet)
20. Heater Hose (Outlet)
21. Drain Cock
22. Bypass Hose
LEGEND
Hot Coolant (From Engine)
Cooled Coolant (To Engine)
Bypass / Other Flow
9. Cylinder Head
10. Coolant Passages
3. Upper Hose
2. Radiator
1. Radiatop
19. Heater Hose (Inlet)
15. Expansion Tank
5. Thermostat
6. Thermostat Housing
20. Heater Hose (Outlet)
16. Coolant Reservoir
12. Cooling Fan
8. Pump Impeller
11. Temperature Sensor
13. Fan Clutch
14. Drive Belt
4. Lower Hose
22. Bypass Hose
21. Drain Cock
COOLANT FLOW DIAGRAM
HOT COOLANT (FROM ENGINE
THERMOSTAT
RADIATOR
COOLED COOLANT TO ENGINE

ANNEXURE-XV
POWER TAKE OFF FM SERIES (CUT SECTION)

1.INPUT SHAFT: -

FUNCTION: Transfer power from the engine to the PTO gear box.
SPECIFICATIONS:
Diameter not more than 70 mm.
Length not less than 240 mm.
MOC – High Strength Steel.
Design splined with 8 splines or better.
Rotation Speed up to 2000 or better.

2. GEARS: -

FUNCTION: Adjust speed and torque between the engine and the pump.
SPECIFICATIONS:
TYPE – Helical gears for smoother operation.
MOC – Forged from special alloy steel/Aluminium alloy.
GEAR RATIO – Range -1:1.17,1:2,1:1.31, 1:1.33,1:1.48,1:1.62.
MAX TORQUE – Up to 300 HP Vehicles.

3. BEARINGS: -

FUNCTION: The Support shafts and enable smooth rotations.
SPECIFICATIONS:
TYPE – Oil lubricated oversized bearings.
MOC – Steel or better

4. OUTPUT SHAFT: -

FUNCTION: Transfer adjusted power to the pump.
SPECIFICATIONS:
DIAMETER – Not more than 30 mm
LENGTH – Not less than 190 mm
MOC - High strength steel
DESIGN – Splined connection.

5. HOUSING: -

FUNCTION: Encase internal components, provides protection and support.
SPECIFICATIONS:
TYPE – Single casing
MOC – Aluminium alloy.
THICKNESS - 10 mm

6. SEALS: -

FUNCTION: Prevent oil leakage and protect against contaminants.
SPECIFICATIONS:
MOC – Nitrile Rubber for oil resistance.
TYPE – Double lip oil seals.
DESIGN – Custom fit to ensure airtight sealing.

7. LUBRICATION SYSTEM: -

FUNCTION: Reduces friction and wear of internal components.
SPECIFICATIONS:
OIL TYPE – Heavy duty gear oil
CAPACITY – Approx 3.5 Liters.
FILTRATION – 10 microns filter.

8. SHIFT MECHANISM: -

FUNCTION: Engage and disengage the PTO.

SPECIFICATIONS:

MANUAL – Control lever operated over ride gear shifting mechanism.

PNEUMATIC – Air controlled.

9. COOLING SYSTEM: -

FUNCTION: Maintains optimal operating temperatures.

SPECIFICATIONS:

TYPE – Water cooling with copper coil.

SOURCES – Inbuilt system.

Annexure - XVI			
SPRINKLER SYSTEM			
S.NO	DESCRIPTION	NAME/ COMPANY	QUANTITY
1	Supply and fixing of Fully Supervised Smoke Detector, Photoelectric detection technology for superior detection sensitivity , sound and transmitted for smoke, tamper and low battery, works on power code protocol, easy programming and enrolling to the control panel, long life 9 volt alkaline or lithium battery including transportation, all taxes and all labour charges etc complete. Makes : As per list of recommended brands.	RAVEL/ VERTEX/PINAKIL	5
2	Supply and installation of dust and vermin proof manual call point to initiate audio visual alarm including the cost of mounting accessories complete as per specifications and as required. Makes : As per list of recommended brands.	RAVEL/ VERTEX/PINAKIL	4
3	Supply and installation of duel tone electronic hooter of 85dB including the cost of mounting accessories complete as per specifications and as required. Makes : As per list of recommended brands	RAVEL/ VERTEX/PINAKIL	4

4	Supply, Installation, testing and commissioning of conventional Micro processor based Fire Alarm panel with ……., 12V SMF batteries etc., complete with all standard accessories. Makes : As per list of recommended brands.	RAVEL/ VERTEX/PINAKIL	1
5	Analogue Addressable Multisensor (Smoke & Heat) detector with LED with standard base having capacity of min 126 address combination. Operating temperature -40°C to 70°C && Humidity 0-95%. The detector should have polling 360 degree viewable LED with 5 class approved response modes all approved with the relevant standards , drift compensation and transient rejection. The detector should trigger heat alarm as per the A1R class requirement.The detector shall have facility to mount in different comprehensive environment like Hostile environment, Parking Garage, Precious storage, Ware house and normal working environments. The detector should have self locking mechanism and requires special tool to remove this detectors.The detector should have hard address inside the base.The detector should be mad up of fire retardant material & should be melt above 100 degree C. The detectors must be openable for the cleaning of dust whenever required.The detector must have 4 non	RAVEL	5

6	Supply, Installation, Testing & Commissioning of Dust and Vermin proof (Resettable) addressable analogue Manual call boxes along with Isolators inbuilt having front reset mechanism with 170° viewable LED and can be viewed from the distance of 7 M. also have inbuilt isolator having operating temperature from -40°C-70°C to initiate audio visual alarm in case of Human detection of fire. The manual call point must be indoor type with IP 44 rating.The call point must be ressatable type without breakglass. Makes : As per list of recommended brands as category I.	RAVEL/ VERTEX	1
7	Supply, Installation, Testing & Commissioning of Analogue Addressable loop powered Sounder & Beacon with inbuilt isolator and having Min 15 distinct sound patterns/ multitone to indicate Exit doors and direct occupants for safe and fast evacuation and 100dB output with minimum 1Hz Frequency flash rate designed for IP65 requirements and approved to operate in –10°C to +55°C temperature, complies with the essential requirement of the EMC Directive to be supplied with Junction Box, Glands and other mounting accessories for proper installation. Makes : As per list of recommended brands as category I.	RAVEL/ VERTEX	1
8	SUPPLY OF 1 ZONE CONTROL PANEL	RAVEL/ VERTEX	1
9	SUPPLY OF WIFI TYPE SMOKE DETECTORS	RAVEL	5
10	SUPPLY OF MANNUL CALL POINTS	RAVEL	1

11	Supply and installation of duel tone electronic hooter of 85dB including the cost of mounting accessories complete as per specifications and as required. Makes : As per list of recommended brands	RAVEL	1
12	SUPPLY OF 1 LOOP FIRE CONTROL PANEL	RAVEL/ VERTEX	1
13	Analogue Addressable Multisensor (Smoke & Heat) detector with LED with standard base having capacity of min 126 address combination. Operating temperature -40°C to 70°C && Humidity 0-95%. The detector should have polling 360 degree viewable LED with 5 class approved response modes all approved with the relevant standards , drift compensation and transient rejection. The detector should trigger heat alarm as per the A1R class requirement.The detector shall have facility to mount in different comprehensive environment like Hostile environment, Parking Garage, Precious storage, Ware house and normal working environments. The detector should have self locking mechanism and requires special tool to remove this detectors.The detector should have hard address inside the base.The detector should be mad up of fire retardant material & should be melt above 100 degree C. The detectors must be openable for the cleaning of dust whenever required.The detector must have 4 non volatile memory to write the installation date & site codes Makes : As per list of recommended brands as category I.	RAVEL	5
	Supply of ……...PVC insulated and sheathed FRLS copper round cable for voltage up to 1100V as per IS 694/1990.	POLYCAB	100

	Supply of ……...PVC insulated and sheathed FRLS ARMORED copper round cable for voltage up to 1100V as per IS 694/1990.	POLYCAB	100

Annexure - XVII			
FIRE ALARM SYSTEM			
SL NO	DESCRIPTION	MAKE	QTY
1	SUPPLY & COMMISSIONING OF 2 ZONE FIRE FLOW SWITCH PANAL	RAVEL/SYSTEM SENSOR	1 NOS
2	SUPPLY & COMMISSIONING OF ELECTROINC HOOTERS	RAVEL/AGNI	1 NOS
3	SUPPLY & COMMISSIONING OF 100 MM DIA FLOW SWITCHES	SYSTEM SENSOR/KARTHAR	2 NOS
4	SUPPLY & COMMISSIONING OF 100 MM DIA M.S. B. CLASS PIPE	TATA/JINDAL	06 MTS
5	SUPPLY & COMMISSIONING OF 150 MM DIA M.S.B CLASS PIPE	TATA/JINDAL	06 MTS
6	SUPPLY & COMMISSIONING OF 80 MM DIA M.S.B CLASS PIPE	TATA/JINDAL	12 MTS
7	SUPPLY & COMMISSIONING OF 65 MM DIA M.S.B CLASS PIPE	TATA/JINDAL	12 MTS
8	SUPPLY & COMMISSIONING OF 50 MM DIA M.S.B CLASS PIPE	TATA/JINDAL	24 MTS
9	SUPPLY & COMMISSIONING OF 25 MM DIA M.S.B CLASS PIPE	TATA/JINDAL	24 MTS
10	SUPPLY & COMMISSIONING OF 80 MM DIA BUTTER FLY VALVES	KARTHAR	02 NOS
11	SUPPLY & COMMISSIONING OF50 MM DIA BUTTER FLY VALVES	KARTHAR	3 NOS
12	SUPPLY & COMMISSIONING OF 25 MM DIA BALL VALVES	KARTHAR	02 NOS

13	Providing fixing, testing and commissioning of 15mm size quartzoid bulb type sprinklers of rating 68º C. pendent / side wall/up right with required accessories. Makes : As per list of recommended brands.	KARTHAR	15 Nos
14	Supply fixing, testing and commissioning of UL approved flexible dropper of 1.5 mtr length with required accessories Makes : As per list of recommended brands.	KARTHAR	15 nos
15	Providing and fixing of Pressure Switch in the MS pipe Line including connection etc as required. Makes : As per list of recommended brands.	Depak/ h guru	2 nos
16	Providing and fixing of Pressure gaze in the MS pipe Line including connection etc as required. Makes : As per list of recommended brands.	Depak/ h guru	2 nos
17	Supply, installation, testing & commissioning of sprinkler flexible pipe (UL Listed) of stainless steel complete with 15 NPT on reducer thread with maximum working pressure of 175 PSI test pressure of 875 PSI (Burst) with branch line (Inlet) 25mm NPT male thread to sprinkler head (Outlet) 15mm NPT female thread with reducer, nipple, 2 side brackets, center bracket, stockbar of following sizes complete as required. Makes : As per list of recommended brands.750mm to 800 mm	karthar	10 nos

18	Providing, fixing, testing & commissioning of installation control valve of cast iron body,brass/bronze working parts comprising of water motor alarm, bronze seat clapper, clapper arm and hydraulically driven mechanical gong bell to sound continuous alarm when the wet riser/sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc of follwing sizes as required : Makes : As per list of recommended brands.	karthar	01 nos
19	Fabrication ,transportation and supply of fully outdoor type wall mounted/floor mounted automatic control panel board with IP-66 protection for 3 phase 7.5 H.P. Motor of Booster Pump set of size 600x 600x 250mm made of 18 SWG CRCA sheet steel enclosure, 14 SWG mounting plate for cable entry fabricated , painted with two coats of Red oxide primer and two coats of Grey paint, lock and key arrangements two side lovures with weld mesh inside and mounted on suitable angle frame work of 450mm height on a PCC pedestal over the terrace consisting of the following equipment/ components with all internal wiring for power and control circuits and control wiring from sensors like pressure switches etc., using copper FRLS cables of suitable	L& t make	01 nos

20	Supplying , installation , testing and commissioning of electric driven Terrace / Mono Bloc Booster pump suitable for automatic operation and consisting of following : complete in all respect as required.7.5 hp	kirloskar	01 nos
21	Supply and fixing air vessel made of 250 mm dia, 8 mm thick MS sheet, 1200mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25mm dia Gun metal wheel valve, with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required.	fabricated	01 nos

ANNEXURE-XVIII
BID DOCUMENT

Supply of Fire Fighting Foam Concentrates and Foam Making Equipment for Fire & Emergency Services Department

Scope of Supply

The Andhra Pradesh Fire & Emergency Services Department intends to procure various types of fire-fighting foam concentrates along with compatible foam making equipment for combating Class-B fires involving petroleum products, chemicals, aviation fuels, polar solvents and industrial hazards.

The equipment shall be suitable for deployment on Water Tenders, Foam Tenders, Industrial Fire Units, Airport Fire Stations, Oil Installations, Petrochemical Industries and Mutual Aid Fire Services.

SECTION-I

Schedule of Requirements

Sl.No	Description	Estimated Qty
1	AFFF 1% Foam Concentrate	As required
2	AFFF 3% Foam Concentrate	As required
3	AFFF 6% Foam Concentrate	As required
4	Alcohol Resistant AFFF (AR-AFFF)	As required
5	Protein Foam	As required
6	Fluoroprotein Foam	As required
7	Film Forming Fluoroprotein Foam (FFFP)	As required
8	Synthetic Foam Concentrate	As required

Sl.No	Description	Estimated Qty
9	Class-A Foam Concentrate	As required
10	Medium Expansion Foam Concentrate	As required
11	High Expansion Foam Concentrate	As required
12	Low Expansion Foam Making Branch Pipe – 225 LPM	As required
13	Portable Foam Inductor (225 LPM)	As required
14	Pickup Tube Assembly with Strainer	As required

The Department reserves the right to alter the quantities depending upon operational requirements.

SECTION-II
Technical Specifications
Part-A
Fire Fighting Foam Concentrates
The offered foam concentrates shall be suitable for extinguishing hydrocarbon fuel fires and polar solvent fires.
Foam Types
AFFF 1%
Suitable for

- Aviation fuel
- Petrol
- Diesel
- Kerosene

Mixing Ratio
1%
Expansion Ratio
Minimum 6–10
Shelf Life
Minimum 10 years

AFFF 3%
Mixing Ratio
3%
Suitable for

- Tank Farms
- Fuel Depots
- Airports
- Refineries

AFFF 6%
Suitable for
Large hydrocarbon storage fires.

Alcohol Resistant AFFF
Suitable for

- Ethanol
- Methanol
- Acetone
- IPA
- Solvent Fires

Must produce polymer membrane protection.

Protein Foam
Natural protein-based foam.
Suitable for
Hydrocarbon fuel fires.

Fluoroprotein Foam
Improved burn-back resistance.

Film Forming Fluoroprotein Foam
High knock-down performance.

Synthetic Foam
For general industrial applications.

Class-A Foam
Suitable for

- Forest fires
- Structural fires
- Wildland fires

Medium Expansion Foam
Expansion Ratio
20–200
Applications

- Warehouses
- Basements
- Ship Holds

High Expansion Foam
Expansion Ratio
200–1000
Applications

- Aircraft Hangars
- Mines
- Chemical Warehouses

Common Requirements
The foam shall

- Be biodegradable.
- Be non-toxic.
- Be free from sedimentation.
- Have excellent burn-back resistance.
- Be compatible with fresh water and sea water.
- Be compatible with all standard proportioning systems.
- Have corrosion inhibitors.
- Have freezing protection.
- Be supplied in sealed HDPE containers of 20 L or 25 L capacity.
- Have minimum shelf life of 10 years.
- Carry batch number, manufacturing date and expiry date.

PART-B
Foam Making Branch Pipes
The Foam Making Branch Pipes shall conform to applicable BIS standards for low expansion foam branch pipes and portable foam inductors.
Type-I
FB-5X
Capacity
225 LPM
Operating Pressure
7 bar
Throw
Minimum 15 metres
Expansion Ratio
Minimum 7
Weight
Maximum 4 kg

Construction
The Branch Pipe shall consist of

- Stainless Steel Mixing Tube

- Hard Anodized Aluminium Body
- Stainless Steel Aspirating Holes
- Foam Expansion Tube
- Air Inlet Screen
- Corrosion Resistant Finish
- Heavy Duty Rubber Grip
- Instantaneous Male Coupling

Operating Characteristics
The Branch Pipe shall
- Produce dense foam.
- Operate continuously.
- Be leak proof.
- Produce uniform foam blanket.
- Be suitable for AFFF, AR-AFFF, Protein, Fluoroprotein and Synthetic Foam.

Portable Foam Inductors
Available capacities
225 LPM
Selectable induction rates
1%
3%
6%
Construction
- Bronze Body
- Stainless Steel Venturi
- Stainless Steel Ball Valve
- Reinforced Pickup Hose

Pickup Tube Assembly
Length
Minimum 2 metres
Material
Oil Resistant Reinforced Hose
Strainer
Stainless Steel

Inspection Tests
The inspection committee shall conduct

- Visual inspection
- Flow rate test
- Foam expansion test
- Foam quality test
- Induction percentage test
- Throw distance test
- Water tightness test
- Hydrostatic pressure test
- Corrosion resistance test

Documents to be Submitted

- OEM Authorization
- ISO 9001
- ISO 14001
- BIS Certificate (where applicable)
- CE/UL/FM Approval (if applicable)
- NABL Test Reports
- Product Catalogue
- Warranty Certificate
- Supply Orders
- Performance Certificates
- GST Registration
- PAN
- MSME Certificate (if applicable)
- Declaration regarding non-blacklisting

Warranty
Minimum 24 Months
The supplier shall replace defective items within fifteen days.

Delivery
Within sixty days from the date of Purchase Order.

Payment

100% payment after successful inspection and acceptance.

Liquidated Damages
0.5% per week
Maximum 10%

Evaluation
The tender shall be evaluated on

- Technical compliance
- Product certification
- Past performance
- Warranty
- Delivery schedule
- Financial bid (L-1)

This bid is intended to procure a range of foam concentrates and compatible foam-making equipment suitable for municipal, industrial, aviation, petrochemical, and hazardous-material fire-fighting operations of the Andhra Pradesh Fire & Emergency Services Department.

ANNEXURE-XIX
SPECIFICATIONS OF ROPES AND DISPLAY OF VARIOUS KNOTS

Supply, Design, Fabrication and Installation of Fire Service Training Display Boards on "Ropes, Lines and Knots"
1. Name of Work
Design, Preparation, Supply and Installation of Fire Service Training Display Boards on Ropes, Lines and Knots for the Andhra Pradesh Fire & Emergency Services Department.
2. Objective
The objective of this work is to develop high-quality instructional display boards for training Fire Service personnel in rope handling, rescue operations, and essential fire service knots. The display boards shall be permanently installed at the AP Fire & Emergency Services Training Institute and other training establishments.
3. Scope of Work
The successful bidder shall be responsible for:

- Designing the complete artwork.
- Developing technical illustrations.
- Preparing high-resolution colour graphics.
- Printing and fabrication of display boards.
- Transportation to the designated location.
- Installation with complete mounting accessories.
- Submission of editable artwork files and high-resolution digital copies.

4. Technical Specifications

A. Display Boards

- Total Number of Boards : 02 no.s each
- Size : 4 ft × 6 ft (minimum) or as approved by the Department
- Material : 4 mm Aluminium Composite Panel (ACP) / equivalent
- Printing : High-resolution UV Digital Printing (minimum 1440 dpi)
- Lamination : Anti-glare, UV-resistant protective lamination
- Frame : Aluminium anodized frame (minimum 25 mm)
- Corners : Rounded and safe finish
- Mounting : Stainless Steel fasteners with wall mounting arrangement

B. Display Content

Each display board shall contain:

Fire Service Ropes

- Types of ropes
- Rope construction
- Rope specifications
- Rope care and maintenance
- Rope inspection
- Rope defects
- Safety precautions

Fire Service Knots

The display shall include coloured illustrations of the following 25 essential knots:

1. Overhand Knot
2. Figure Eight Knot
3. Figure Eight on a Bight
4. Figure Eight Follow Through
5. Bowline
6. Running Bowline
7. Bowline on a Bight
8. Clove Hitch
9. Round Turn and Two Half Hitches
10. Two Half Hitches

11. Sheet Bend
12. Double Sheet Bend
13. Reef (Square) Knot
14. Fisherman's Knot
15. Double Fisherman's Knot
16. Prusik Knot
17. Alpine Butterfly Knot
18. Timber Hitch
19. Rolling Hitch
20. Munter (Italian) Hitch
21. Water Knot
22. Fireman's Chair Knot
23. Klemheist Knot
24. Bachmann Knot
25. Handcuff Knot

C. For Every Knot
Each knot shall include:

- High-resolution colour illustration
- Step-by-step tying procedure
- Finished knot
- Name of knot
- Classification
- Fire Service application
- Advantages
- Limitations
- Safety precautions
- Rope diameter suitability
- Load direction arrows
- Common mistakes to avoid

5. Artwork

The artwork shall:

- Be professionally designed.
- Use vector graphics.
- Be suitable for large-format printing.
- Include bilingual content (English and Telugu) if instructed by the Department.
- Be approved by the Department before printing.

6. Quality Requirements

The display boards shall be:

- Water resistant
- UV resistant
- Scratch resistant
- Fade resistant
- Easy to clean
- Suitable for indoor training halls

Minimum service life shall be five (5) years under normal conditions.

7. Installation

The bidder shall provide:

- Transportation
- Labour
- Mounting accessories
- Installation at designated locations
- Final cleaning after installation

8. Deliverables

The bidder shall supply:

- Installed display boards
- Editable artwork files (AI/CDR/PSD)
- High-resolution PDF files
- JPEG images (minimum 300 dpi)
- Warranty certificate
- Operation and maintenance instructions

9. Completion Period
The entire work shall be completed within 30 days from the date of issue of the Work Order.

10. Warranty
The display boards shall carry a minimum warranty of three (3) years against:

- Colour fading
- Delamination
- Manufacturing defects
- Printing defects

11. Inspection and Acceptance
The Department reserves the right to inspect the display boards during fabrication and after installation. Only boards conforming to the approved specifications shall be accepted.

12. Acceptance Criteria
The work shall be considered complete only after:

- Approval of artwork.
- Successful installation.
- Submission of all digital files.
- Certification by the designated departmental inspection committee.

Any defects noticed during the warranty period shall be rectified or replaced by the bidder at no additional cost to the Department.

ANNEXURE-XX
HYDRAULIC COMBITOOL – SPECIFICATIONS

TECHNICAL SPECIFICATIONS:

The Hydraulic Combitool to be supplied should meet the following technical parameters. No deviation in the parameters will be allowed.

General parameters:
The tool should be of reputed make.
The tool should be certified to following standards: EN 13204 & NFPA 1936.
Certificates to be submitted.
The tool should be battery operated & not require any power pump to operate.

Sourcing:
The tool should be able to operate through a battery to be connected to the tool directly & no use of external power pumps or hoses should be required.
The battery shall be Li-Ion 28 V.

The tool to have option for connecting to AC power source using a cable of at least 3 m & the same to be supplied along.

Operation parameters:
The tool to be used for cutting-spreading with door opening operations with help of interchangeable tips.
The tool handle should be 360 deg rotating with insulated fibre/plastic grip for user safety & the handle shall be locked at any position.
The tool to have integrated LEDs for use during the dark or night operations.
The tool operation to be done through push button controls & avoiding any twist control.
ON/Off illuminated button on the front of the tool.
Battery indicator on the tool battery.
The door opening tips shall be designed with spikes on them to have proper grip during usage.

Technical parameters:
EN class: 1H/2H/3H/4H/5H (minimum)
NFPA classification: A6/B7/C6/D7/E7 (minimum)
Max. spreading force equal to or more than 1300 KN
Min. spreading force equal to or more than 30 KN
Min. cutting capacity: 25 mm round steel bar
Min. cutting force: not less than 290 KN
Min. spreading distance: not less than 275 mm for standard spreading tips
Min. spreading distance: not less than 280 mm for door spreading tips
Weight: Max. 14.5 kg (with std blade)
Accessories:
Spread tips
Door spread tips
Li-Ion battery (1)
Charger
Cable for AC connection
OEM authority letter to be submitted.

ANNEXURE-XXI(A)
B.A SET WITH ADSU SPECIFICATIONS

Self-Contained open circuit Compressed Air Breathing Apparatus (SCBA) Set Confirming to EN137:2006 Type 2/ IS 10245 (Part 2):2023 & CBRN approved, with 6 Liters /300 Bar Aluminium lined fully wrapped carbon composite material Compressed Air Cylinders. as per following specifications.

General requirement:
The set shall be self-contained open circuit type compressed air breathing apparatus set fully confirming to EN 137: 2006 Type 2/ IS 10245 (Part 2):2023 or its latest version and shall be approved as per CBRN standard for respiratory protection devices. Anti-Static Property ATEX II 1G IIC T6 II 1D IIIC –30°C <= Ta<= +60°C.
The BA set shall contain air cylinder, back plate, facemask, lung demand regulator, pressure reducing valve, Pressure Gauges, hoses, standard carrying case to be provided.

The minimum duration of use of the set shall not be less than 45 minutes. The weight shall not exceed more than 11 kg.
The design of the set shall be such that there is no protruding parts or sharp edges likely to be caught on projections in narrow passages.
Original equipment manufacturer (OEM) name and CE/EN marking shall be visible, on the set. warranty 10 years.
Back plate with body Harness:
Back plate should be manufactured from Glass fibre reinforced polyamide, flame retardant and conducting surface material and it consists carrying straps, pneumatic system single line high pressure hose inside a medium-pressure hose, containing a cylinder connector, reducer, pressure gauge, whistle and lung demand valve. Pneumatics easy detachable. Back plate should contain a swivel waist pad, S Shaped shoulder straps Shoulder and waist straps should consist reflective elements for better visibility and must be constructed from a high abrasion resistant, high puncture resistant, light weight and water-resistant f Flame retardant polyethylene foam padding Outer shell: Coated aramid textile, flame retardant, tear resistant and conducting with layered band made from polyamide webbing coated with CR rubber material.
Full face mask:
Positive pressure Full face Material: Face blank and Head harness Rubber: Acrylonitrile and Butadiene rubber NBR , Lens frame : Nylon (PA), Lens Polycarbonate with hard coat APEC with hard coat and antifog, Neck strap : Rubber CR, Helmet adapters : Stainless steel mask assembly shall be big facial counter with a wide reflex seal, speech diaphragm, inner mask (nose cup), visor, rubber head band, good speech transmission and having flame resistance requirement meeting to EN 136 Class 3+ and Antistatic approval. Best protection for chemical resistance and permeation. With CE/EN marking, manufacturer name/symbol field of vision shall be more than 90% and it should upgradable with communication system in future.
Full Automatic First Stage Pressure Reducer: The first stage pressure reducer shall be mounted in a protected position on the rear, lower portion of the back frame. The pressure reducer shall be of a fail-safe spring-loaded piston design, with an integral pressure relief valve, consisting of only two moving parts. The reducer shall be completely automatic, low maintenance and require no calibration. The reducer shall have flow characteristics that exceed 1000 Liters /min and be protected by a pressure relief valve that operates between 11.5 and 13.5 bar. The reducer shall be capable of reducing the pressure at first stage to minimum 7.5 bar and designed to function with either 200 or 300 bar cylinders.
Lung demand valve:
Lung demand valve should have a medium pressure hose, with quick release coupling. Lung demand Valve should contain a rubber membrane for better H2S and other gases protection. Disconnection from the mask should occur by simultaneously pressing the buttons on the sides of the lung demand valve. Airflow should automatically shut off when disconnecting.
Low pressure warning whistle:
SCBA set should be provided with low pressure warning whistle when pressure drops to 55 bar
± 5 bar for a 300 Bar system. Warning signal should be located on the pressure gauge.
Pressure gauge:
SCBA should have a 300 Bar pressure gauge to monitor cylinder at the input of the first stage reducer. Manifold unit two medium pressure couplings.

Compressed air cylinder:
Cylinder shall be fully wrapped composite material and basically approved to EN 12245 or CE marked. The weight of the cylinder when fully charged shall not be more than 6.8Kg. The carbon composite material and it should be provided with Valve. Air cylinder shall have a water capacity of
6.8 Liters and free air capacity of min 1850 litres when filled at a pressure of 300 bar. Cylinder shall be approved by PESO (Petroleum and explosive safety organization) and certificate to that effect shall be submitted at the time of inspection. The cylinder shall be supplied with valve made from nickel plated brass and shall comply with EN 144-2 & CCE approved.
Enhanced HYGIENE
Set should be easy to clean and disinfect Dust and water-repellent harness material Simplified disassembly and assembly of components Entire SCBA is machine washable.
Preferable Make: MSA.

ANNEXURE-XXII(A)
PORTABLE PUMP: (As per IS 942 - 1982)

SCOPE
This standard lays down the requirements regarding material and design of 275 l/min portable pump set for fire fighting.
GENERAL REQUIREMENTS :
The unit shall consist of the pump having an output of not less than 275 l/min at a pressure of 4 kgf/cm 2, fitted on a tubular steel frame and with anti-vibration coils/pads. The complete unit shall be of lightweight construction, so that it can be easily carried by two men.
2. MATERIAL:
The pump comprising volute, body (casing) impeller and one delivery outlet shall be manufactured from light aluminium alloy conforming to IS : 617-1975*.

The mild steel tubes used for the fabrication of tubular frame shall conform to IS : 3601-1966.
The spindle of the delivery valve shall be made of stainless steel conforming to 07CR18Ni9 Grade of IS : 6603-1972

All parts which form waterways, or come into contact with water, shall be of corrosion resisting material or treated in a suitable manner. All metal parts exposed to atmosphere shall be either corrosion resisting or treated in a suitable manner.
DESIGN :
The components of the unit shall comply with the following requirements.
Engine :
The engine shall be a single cylinder two-stroke or four-stroke petrol or diesel driven.
The engine shall be air-cooled.
A well designed hand starting device shall be provided to ensure reliable and quick starting engine.
Pump:
The pump shall be of single stage centrifugal type, directly mounted on the extension of the crankshaft of the engine.

The pump casing shall be so designed as to afford easy access to the impeller and facilitate erection and inspection. The outer face of the pump casing shall carry the suction and delivery connections and their fittings and priming device

4.1.2.4 The pump shall be fitted with mechanical gland of self adjusting type.

4.1.2.4 The pump shall be tested for the performance of its duties (see 4.1.2.5) at 27” & 2°C and at pressure of 760 mm of mercury. The following allowances (deductions) shall be made

Output:

One percent of every 2YC rise in water temperature;
4 percent for every 300 mm elevation above mean sea level; and
No allowance shall be made for humidity up to75 percent. However, deductions at the rate of 1 percent of every 5 percent change in humidity shall be made when the humidity ranges from 75 to 95 percent.
Lift -i) 30 cm every 300 m elevation above mean sea level, and One percent for every 2*5”C rise in water temperature.
4.1.2.5
The pump shall be tested with suction strainer fitted continuously for 4 hours shall be with a lift of 3 m for the following duties

Output 1/Min	Pressure Kgf/cm^2
545	2.5
365	3.5
275.	4.0

4.1.2.6 The pump suction shall be fitted with 75 mm male round threads and female blank cap. The round threads shall confirm to Table 3 of IS : 902-1974*.
4.1.2.7 The delivery valve shall be of screw down type and fitted with 63 mm female instantaneous coupling and blank cap. The delivery valve shall confirm to IS : 4928- 19687.

Primer - The primer shall be capable of lifting water at least through 7 m in not more than 45 seconds and shall be preferably fully automatic.

Framework - It shall be of a cradle design made of tubular steel and provided with anti-vibration coils/pads.

The cradle shall be fitted with 4 folding handles of spring loaded type. The handles shall be capable of being used for tying the ropes for slingling the pump down in the well.
Suction Hose -The lengths of 75 mm suction hose shall be 4 of 2.5 m or 2 of 4.5 m conforming to IS : 2410-1963*. The suction hose shall be fitted with 75 mm suction hose coupling conforming to IS : 902-19747
Fuel Tank - The fuel tank shall continuous running.
The control panel shall include:
Hand trottle,
Pressure gauge calibrated from 0 to 10 kgf/cm2, and
Compound gauge with pressure calibrated from 0 to 6 kgf/cm^2 in black and vacuum 0 to 75 cms of mercury in red

Tools and Instruction Book - A tool kit comprising all essential tools
required for normal maintenance, shall be provided with each pump along with a fully illustrated booklet and item wise spare parts list.
Weight -The total weight of the unit with fuel shall not exceed 110 kgs.
WORKMANSHIP AND FINISH
All parts of the unit shall be of good workmanship.
The cradle shall be painted in Fire Red (see Shade No. 536 of IS : 5-1978 +). The paint shall conform to IS :2932-1974.
MARKINGS :
Each pump set shall be clearly and permanently marked with the following information:
Manufacturer's name or trade-mark;
Type of engine and pump;
The output of the pump in l/min;
Weight of the pump set;
Year of manufacture; and
Instructions for operation of the pump.
Preferable Make-Godiva/Rosen Bauer/Firefly/Firex

ANNEXURE-XXII(B)
FLOATING PUMP

PICTURE OF EQUIPMENT

GENERAL For the purpose of fire fighting and rescue operation light weight, reliable, self priming pump that floats, discharge water @ at least 180 ltr/min. The pump is having suitable cooling system to permit the pump to run continuously and easy to start by one person.The pump is that of centrifugal type and direct coupledto the engine.
PUMP AND ENGINE SPECIFICATIONS
Casing : Anodized Aluminium Impeller : Bronze impeller
OTHER STANDARD PUMP EQUIPMENT
Water resistant air cleaner and muffler.
ENGINE SPECIFICATION
6 to 8 hp or more, air cooled.
Recoil starter with handle
Solid state ignition
Use unleaded gasoline/ petrol and oil mixed
Minimum 2 years parts and service warranty
Automatic float controlled throttle
Compression release valve for easier starts
FUEL TANK

Appropriate for continuous run of at least 1 hrs.
FLOAT ASSEMBLY
High Density polyethylene shell filled with polyurethane foam (closed cell)/fibre float
WEIGHT
Dry weight not more than 30 Kgs

ANNEXURE-XXIII

Technical Specification of Smoke Exhauster Cum-Blower

ANNEXTURE -I (25)

TECHNICAL SPECIFICATION OF SMOKE EXHAUSTER CUM -BLOWER

SPECIFICATION	SPECIFICATION NAME	REQUIREMENT
GENERAL REQUIEMENTS	--	It should e portable, high output smoke exhauster cum blower, driven by petrol engine, suitable for use by fire fighter/rescue team for both PPV application (for blowing) and as well as NPV applications (for smoke ejection/suction) of hazardous gases/smoke in emergency satuations.
TECHNICAL SPECIFICATION	Dimension	The exhauster cum blower should be compact in dimension/size and should be measure more than 20" (Height)X20" (Width)X18"(Depth) with a tolerance of +/-10% so that it can be easily placed in the fire tender compartment ,if so required.
	Weight	Weight shall be 35 Kg maximum
	Out put	The Exhauster cum blower should have high output air flow of more than 11,500 CFM (Cubic feet per minutes) for effective operations
	Engine	The engine shall be not less than 3.5 HP
	Type	Negative and positive pressure ventilation fan
	Drive/motor	Direct Drive Gasoline
	Blade	At least 16" Dia shall made up of non metallic Fiberglass Reinforced Polyamide Blades Metallic blades not acceptable on Safety factor
	Safety Grill	Continuous Circular Wound, Zinc-Planted Steel
	Frame	Formed and Welded Sheet Metal Constructions with Powder-Coat Finish. Arrangement shall be made to lift smoke exhauster cum blower by 02 persons easily.
	Oil Tank capacity	Oil tank capacity should be so designed to run smoke exhauster continuously for more than 02 hours
	Operational test	It shall remain stable and shall not move from its place by more than 30 cm during running. All the components shall be checked and there shall not be any looseness
OTHER FEATURES		The smoke exhauster cum blower design should be ERGONOMIC such that user can start/stop the engine from top/side with pull rope mechanism so that engine can be started/stopped with ducting connected at either of the two ends.
		It should be supplied with Two COLLAPSIBLE DUCTING with reinforcements and length 7 meter or more made of anti –static material along with duct connecting adopter so that ducting can be connected on either of the exhauster/blower.
PAINTING		Smoke exhauster cum blower except engine shall have two coats of paint after one coat of red oxide primer
CERTIFICATIONS		The Unit should be tested by Central Govt/ International Air Movement Test Lab (operational ventilation for compartment fire fighting) and copy of test report be submitted with offer. Test report should include testing of exhauster at floor level capacity more than 11,500 CFM as well as height of 0.75 m capacity more that 12000 CFM as smoke rise above ground levels. Test report should clearly mention what measurements apparatus was used to testing and test methodology & procedure used for testing.
MARKING		Name and trade mark of manufacturer, Year of manufacturer.
WARRANTY		The smoke exhauster cum blower shall be covered by a warranty providing protection against defects in materials or workmanship for a period of 2 year.
INSPECTION		(a)Joint Pre-Dispatch inspection (PDI) of CISF & Management representative shall be carried out at work place of supplier. (b) The supplier should have required testing facilities at its workplace or supplier should arrange the same.

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while operating the bags.

Lifting Capacity shall not be less than	Min. Inflation height shall not be less than	Dimensions shall not exceed	In any case weight shall not exceed	Air requirement @ 12 bar shall not be more than	Quantity
1 Ton	70 mm	140 x 130 mm	0.5 kg	6 litres	1
5 Tons	120 mm	255 x 200 mm	1.5 kg	25 litres	1
10 Tons	175 mm	320 x 320 mm	3 kg	125 litres	1
20 Tons	240 mm	440 x 440 mm	5 kg	255 litres	1
40 Tons	335 mm	610 x 610 mm	9.5 kg	605 litres	1
59 Tons	390 mm	790 x 690 mm	14 kg	1105 litres	1

The bags shall be certified for compliance with EN 13731 by either TUV Germany /UL USA/EIL India only. The air bags must supply with the following accessories:

Pressure regulator 300 Bar to 12 Bar
Control box shall be yellow in color with lever type joystick for operating 2 bags with pressure gauges and carrying strap
Single Control Unit
Dual Control Unit
Air inflation Hose 5 Mtrs
Air inflation Hose 10 Mtrs
Shut off hose with safety valve
Dual connector

ANNEX-XXV
HAND HELD GAS DETECTOR

Characteristics	Gas Detector to measure four gases LEL, O2, H2S & CO
Size (LxWxH)	Handy, easy to carry, size should not exceed 4.5"x3"x1.5"
Weight	Not more than 250 gms.
Carrying Attachments	Should have Clip Attachments to Hard Hat/Belt/Lanyard/Pocket.
Usability	3 Button Operation, easy to use even with gloves put on
Operating Temperature Range	-40°C to +60°C
Operating Humidity Tolerance	Intermittent15% - 90% non-condensing
Ingress Protection	IP68 **(Waterproof to 6-ft (2m) for 1 hr)**
Alarms	95dB @ 1 ft Supported with Visual (LED Lit) and Vibrations
Sensor Life	Expected sensor life is more than 5 years
Response Time T90	T90 <15 Seconds
Sampling	Diffusion Mode
Reading	High Contrast LCD with Backlit
Casing	Rugged Rubberized Armor
Warranty	4 Years for the complete instrument
Durability	C25-foot (7.5 m) drop protectionMIL-STD-810G drop protection Certified

Safety Features	Should have features like Motion Alert and Instant Alert for applications like confined space entry
Motion Alert	The Motion Alert sensor activates within 30 seconds when a user becomes disabled and motionless, quickly alerting others to the disabled user's location
Instant Alert	with a simple push of a button, the Instant Alert feature enables users to manually alert others to potentially hazardous situations.
End-of-Sensor Life Indication	end-of-sensor warning cautions user when unit's sensor needs to be changed
Battery Type	Rechargeable Li-Polymer battery
Run Time	24 Hours run time
Charging Time	> 4 Hours charging time
Intrinsic Safe Approvals	ATEX & PESO Approval (suitable for Zone 0 applications)
Drop test (in house)	withstand a 7.5 m drop onto concrete
Calibration tools	Unit shall require no special tools for calibration other than calibration cap, cylinder, regulator, and tubing to supply gas to instrument.
Acceptable Make	MSA / Rosenbauer / Magirus

ANNEXURE-XXVI

TECHNICAL SPECIFICATIONS OF T-SHIRT AND BERMUDA (OUTDOOR SUIT)

(OPERATIONAL UNIFORM)

I. T-SHIRT (COLOUR:BRIGHT RED)

1.0 SCOPE

1.1 The specification prescribes the requirement of "T-Shirt Colour Bright Red" herein referred as "T-Shirt".

1.2 This specification does not specify general appearance; feel etc of the "T-Shirt".

2.0 MANUFACTURE AND FINISH

2.1 The T-Shirt shall be manufactured as per standard manufacturing techniques with raglan sleeve. Mandarin collar T shirt shall have the front zipper opening. The sizes will be informed by Department to the successful bidder after awarding the tender. The design and shape of the T-shirt shall be as per Figure 1 to 2.

2.2 Bright Red knitted Fabric: This fabric shall be used to manufacture "T-Shirt". The knitted fabric shall be made using 100% polyester multifilament yarns. The fabric used for "T-Shirt" shall be well singed,

'Heat set' and fully shrunk. The knitted fabric shall be treated with water repellent finishes. The treatment is given in such a way that the water when sprayed over the outer side (surface) fabric of the T-shirt, it should spread fast on the outer surface. Due to faster spreading, the evaporation of water from the surface will be fast. Beside this, water should not penetrate into the inner surface of fabric used in the T-Shirt. In case of water penetrates through the outer side of the fabric it should be able to push out the water from inside to the outer surface of the fabric with or without rubbing on the fabric. It will give dry feel to the wearer. The water repellent finishing should not affect the air permeability property of the fabric and after finishing it should be maintained

The water repellency, on face side (Spray test), Rating will be made as per IS:390:1975 method. Observations shall be done on same test specification on bode side and rated as per the following:

i) Face Surface - 50 Maximum
ii) Back Surface - 90 Minimum

AP FIRE should be written on the back side of the T-Shirt with silver colour retro reflective tape as shown in the Figure-2. The size of the AP FIRE in length should be 20 cm and 6.5 cm in height. For more clarification, AP FIRE Service Department may be contacted.

Fig. 1: Front of T-Shirt

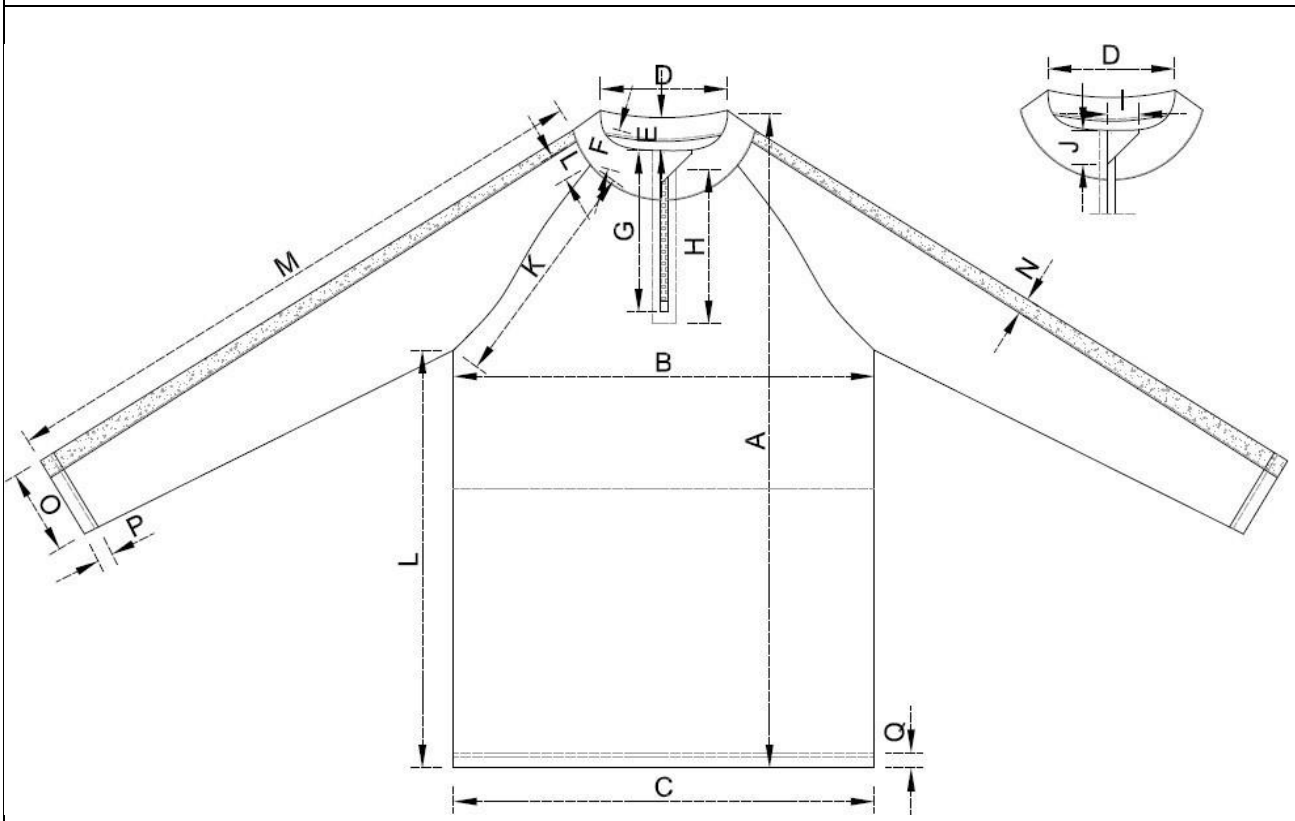
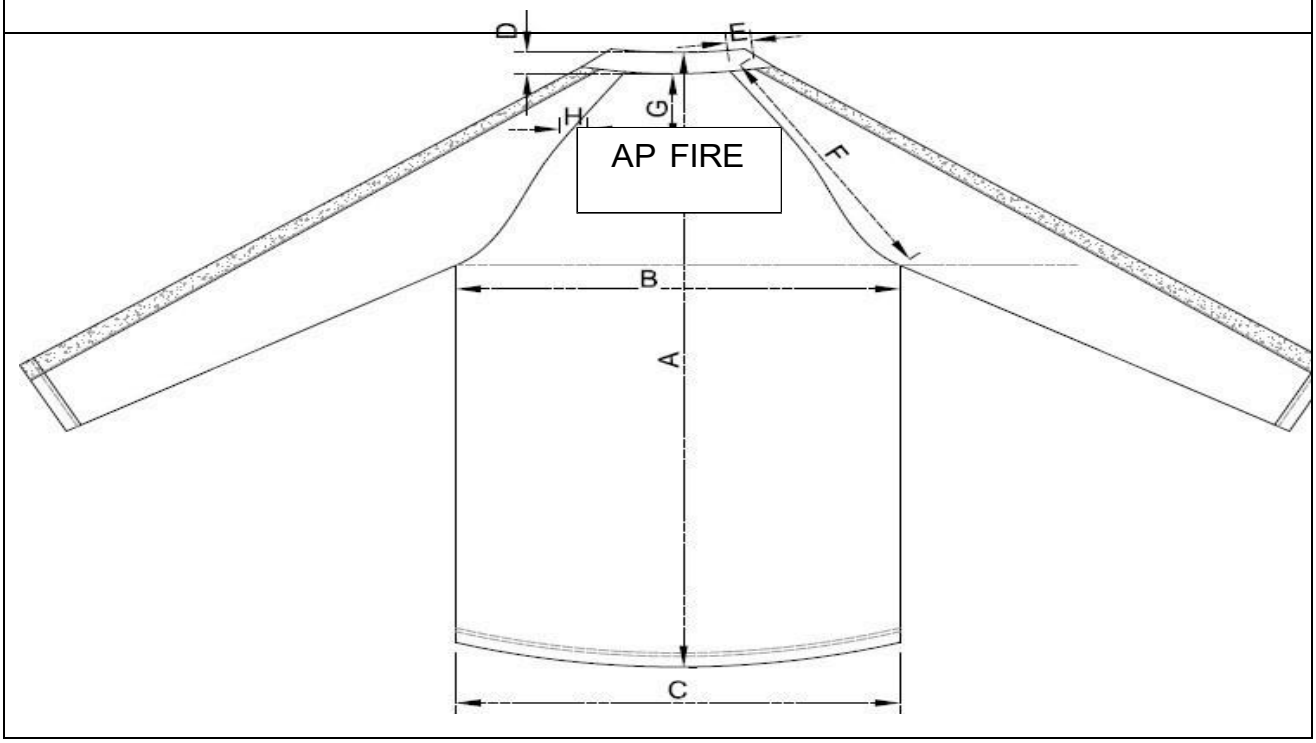


Fig. 2: Back of T-Shirt



Note: The measurement as indicated above A,B,C,D….etc will be given to the successful tender before issue of work order.

2.3 Freedom from Defect: The *'T-Shirt'* shall be visually examined. It shall be evenly stitched, free from missed stitches, holes, cuts and puckering defects. The colour of the sewing thread used for stitching shall not bleed or stain. The *'T-Shirt'* shall be free from dyeing defects such as uneven dyeing, streaks, stains.

The 'T-Shirt' shall be free from any other defect which may significantly mark the appearance or serviceability.

3.0 STITCHING

4±0.5 stitches per cm shall be employed for assembling the "T-Shirt". The stitching shall be done with even tension and all loose ends shall be securely fastened off. Polyester Sewing thread shall be used. The colour of swing threads shall match with the colour of "T-Shirt" cloth.

4.0 WORKMANSHIP AND FINISH

The "T-Shirt" shall be free from workmanship defects i.e. texture, knitting, weaving and dyeing flaws. The "T-Shirt" shall not have missed stitches, hole, cut, oil stains or any other defect which may significantly affect the appearance or serviceability of "T-Shirt".

5.0 SEALED SAMPLE

In order to illustrate or specify the indeterminable characteristics such as general appearance luster and feel of the "T-Shirt", a sample has been agreed upon and sealed; the supply shall be conformity with the sample in such respects. The custody of the sealed sample shall be a matter of prior agreement between the buyer and seller.

6.0 MARKING

A suitable cloth label shall be securely stitched on the inner side of the waist (back side) of each 'T-Shirt'. Care labeling instruction shall be given and it shall be fastened at the place of the 'T-Shirt' as per the buyer instructions.

Following shall be marked on the cloth label:

(a) Name of the material, namely, 'T-Shirt'
(b) Size in cm
(c) Any other information required by the buyer.

NOTE: The Indication on the cloth label shall be such that the colour from the label shall not bleed on the 'T-Shirt' during storage or use.

8.0 PACKAGING & PACKING

The 'T-Shirt' shall be packed in polyethylene or polypropylene bags and or in box, as required by the buyer. However, on each box the following shall be indicated:

(a) Name of material
(b) Size in cm
(c) Quantity per box
(d) Indication of the source of manufacture and
(e) Any other information as required by the buyer or the law in force.

The boxes containing 'T-Shirt' shall be packed as agreed to between the buyer and seller.

9.0 SAMPLING AND CRITERIA FOR CONFORMITY

Sampling and criteria for conformity of the lot shall be as per the requirement of AP Fire Service Department.

10.0 REQUIREMENTS:

The "T-Shirt" shall conform to the requirements given in Table 3 . The slide fastener shall be Bright Red in colour. The length of slide fastener shall be 20±1 cm. The other requirement of the slide fasteners shall be as given in the Table 3.The vendor shall supply extra raw materials for testing purpose, if required.

TABLE 3: Requirements of Bright Red knitted fabric of T-Shirt

Sl. No.	Characteristics	Requirements	Test Method
1	Approximate count of yarn (For guidance only),	150 Denier (100% multifilament Polyester, Around 100 filaments)	IS 3442:1980
2	Blend composition, %	100% Polyester	IS 667: 1981 and IS 3416 (pt-1) :1988 (Dry mass basis)
3	Mass, gm/m^2	200±20	IS 1964:1970
4	Bursting Strength, Newton/cm^2	150±10	IS 1966: 1976
5	Colour fastness to washing - Change in colour - Staining on adjacent fabric	 4 or better 4 or better	IS/ISO 105 C10 C(3) :2010
6	Colour fastness to perspiration - Change in colour - Staining on adjacent fabric	 4 or better 4 or better	IS 971:1983
7	Colour fastness to rubbing - Dry - Wet	 4 or better 4 or better	IS 766:1988
8	Colour fastness to light	4 or better (on Blue wool)	IS 2454:1985
9	Dimensional Change due to relaxation, both directions, percentage, maximum	2.0	IS 2977:1989

10	pH of aqueous extract value	6.0-8.5	IS 1390:1983 (Cold method)
11	Colour	$\Delta Ecmc \leq 2.5$	See Table 4
Slide fastener			
12	Designation	Medium - Chain width: 6.00±0.3 mm - Thickness: 2.60 mm (min.)	IS 14181: 2002 (Part-1)
13	Type	Closed end	IS 14181: 2002 (Part-1)
14	Colour	Bright Red	Visual
15	Security of interlocking of textile chain to cross wise strength	650N	IS 14181: 2002 (Part-1)
16	Security of attachment of puller to slider	250N	IS 14181: 2002 (Part
17	Security of slider lock holding	40N	IS 14181: 2002 (Part
Retro reflective Material			
18	Colour	Silver	Visual
19	Co-efficient of retro reflection for separate performance material (Normal state-without wash), cd/(lx.m^2), Minimum	330 (Coefficient of retro reflection at two rotation angles $\varepsilon1=0^o$ and $\varepsilon2=90^o$ should not differ) 15%	BS EN ISO 20471: 2013 (Observer angle 12', Entrance angle 5^o)

II. TRUNK WEAR BERMUDA HALF & FULL TRACK (COLOUR BRIGHT RED)

1.0 SCOPE

1.1 The specification prescribes the requirement of “Trunk Wear Bermuda (Bright Red colour)” herein referred as “Bermuda”

1.2 This specification does not specify general appearance; feel etc of the “Bermuda”

2.0 MANUFACTURE AND FINISH

2.1 The design and shape of the *‘Bermuda’* shall be as per Figure 1, 2.

2.2 Bright Red Knitted Fabric: This fabric shall be used to manufacture “Bermuda”. The knitted fabric (for guidance of knitted structure, Annexure-C may be referred) shall be made using 100% polyester multifilament yarns. The fabric used for “Bermuda” shall be well singed, ‘Heat set’ and fully shrunk. The knitted fabric shall be treated with water repellent finishes. The treatment is given in such a way that the water when sprayed over the outer side (surface) fabric of the Bermuda, it should spread fast on the outer surface. Due to faster spreading, the evaporation of water from the surface will be fast. Beside this, water should not penetrate into the inner surface of fabric used in the Bermuda. In case of water penetrates through the outer side of the fabric it should be able to push out the water from inside to the outer surface of the fabric with or without rubbing on the fabric. It will give dry feel to the wearer. The water repellent finishing should not affect the air permeability property of the fabric and after finishing it should be maintained.

One Set of Half Bermuda and Full Track should be packed together in one Bag with the T-Shirt.

The water repellency, on face side (Spray test), Rating will be made as per IS: 390:1975 method. Observations shall be done on same test specification on bode side and rated as per the following:

i) Face Surface - 50 Maximum
ii) Back Surface - 90 Minimum

2.3 Drawstring: To tight and loose Bermuda, an Bright Red colour 100% round polyester string (suitable diameter and 1540mm ± 20 mm length) shall be used. The both end of the string shall be finished with plastic/metal aglets. For more information about the round string and aglet, sample held in the custody of AP Fire Service Department may be referred.

2.4 Pockets: Bermuda shall have two side pockets. Pocket bags shall be made with same fabric and color like waistband and Bermuda. Raw edges of pocket bag shall be finished with over edge stitch.

One small packet shall be stitched at the front waist level inside the Bermuda. For more clarification, sample held in the custody of AP FIRE SERVICE DEPARTMENT may be referred.

2.5 The raw fabric edges at the bottom portion of the *'Bermuda'* shall be folded and sewn to form a hem of 25±3 mm width.

2.6 Waist of the *'Bermuda'*, shall be finished with elasticized band and draw string. Edge of the fabric shall be turned into of 55±2 mm (i.e width of the waist band) and stitched with 55±2 mm wide elastic tape throughout the waist band. For more clarification, sample held in the custody of AP FIRE SERVICE DEPARTMENT may be referred.

2.7 In the front side of Bermuda (Fig. 1 and Fig. 2), AP FIRE SERVICE DEPARTMENT shall be written using Retro reflective tape. The size of the AP FIRE SERVICE DEPARTMENT should be 20 cm in length and 6.5 cm in height. For more clarification, sample held in the custody of AP FIRE SERVICE DEPARTMENT may be referred.

2.8 Dimensions: The dimensions of *'Bermuda* when measured shall conform to the requirements given in Table 1A , Table 1B and Table 1C. Dimensions of the Bermuda shall be measured as per Annex B. For the measurement of *'Bermuda'*, take a *'Bermuda'*; lay it flat on a horizontal surface. Remove all creases and wrinkles without distorting it. Measure corrects to the nearest millimeter the dimensions given in Table 1A, Table 1B and Table 1C.

2.9 Freedom from Defect: The *'Bermuda'* shall be visually examined. It shall be evenly stitched, free from missed stitches, holes, cuts and puckering defects. The colour of the sewing thread used for stitching shall not bleed or stain. The *'Bermuda'* shall be free from dyeing defects such as uneven dyeing, streaks, stains.

The 'Bermuda' shall be free from any other defect which may significantly mark the appearance or serviceability.

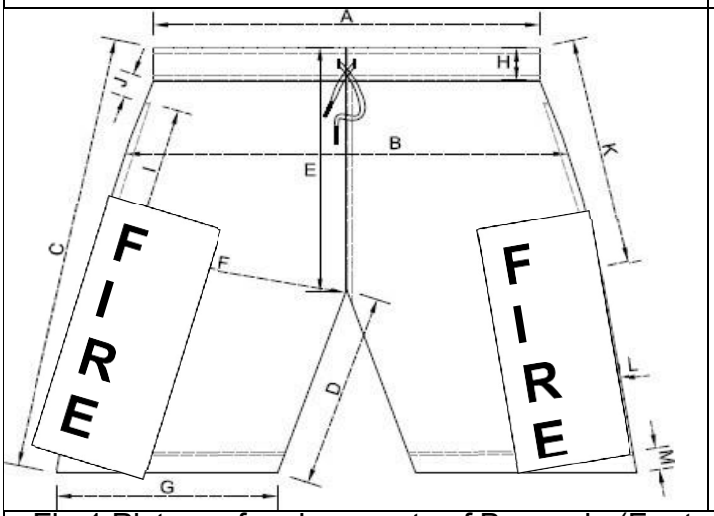
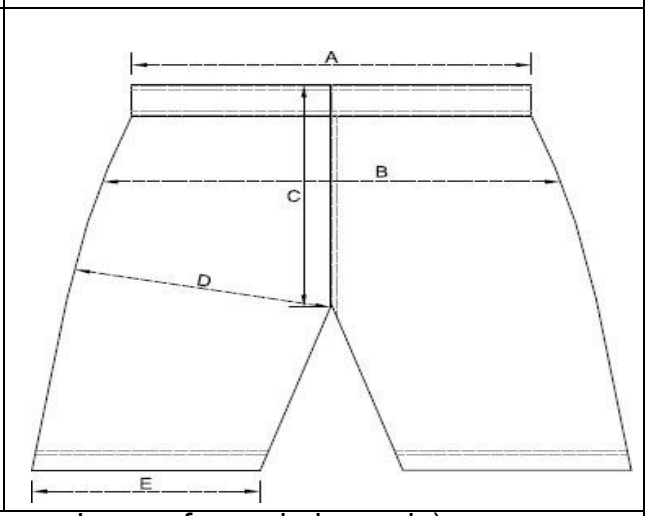
Front side of Bermuda	Back side of Bermuda
	

Fig.1 Picture of various parts of Bermuda (For true colours refer sealed sample)

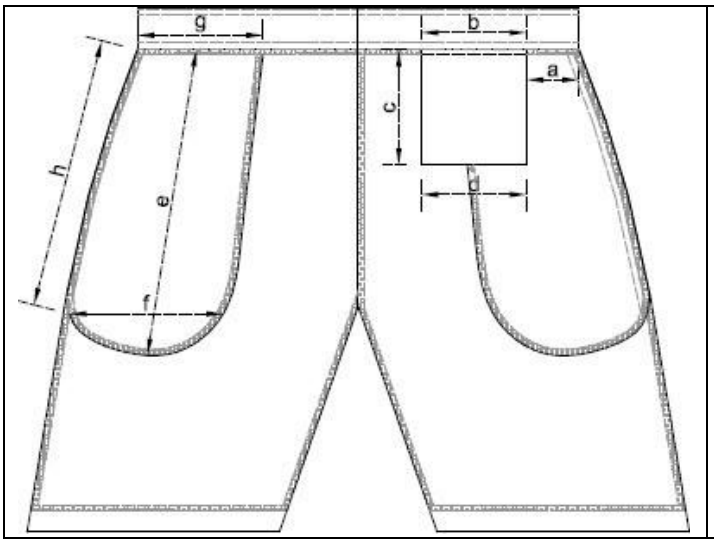


Figure 2: Inside view of the 'Bermuda'

Note: The measurement as indicated above A,B,C,D….etc will be given to the successful tender before issue of work order.

3.0 STITCHING

Over Lock stitch having at least 4±0.5 stitches per cm shall be employed for assembling the "Bermuda". The stitching shall be done with even tension and all loose ends shall be securely fastened off. Sewing thread colour shall match with the "Bermuda" cloth.

4.0 WORKMANSHIP AND FINISH

The "Bermuda" shall be free from workmanship defects i.e. texture, weaving, dyeing flaws etc. The "Bermuda" shall not have missed stitches, hole, cut, oil stains or any other defect which may significantly affect the appearance or serviceability of "Bermuda".

5.0 SEALED SAMPLE

In order to illustrate or specify the indeterminable characteristics such as general appearance luster and feel of the "Bermuda", a sample has been agreed upon and sealed; the supply shall be conformity with the sample in such respects. The custody of the sealed sample shall be a matter of prior agreement between the buyer and seller.

6.0 MARKING

A suitable cloth label shall be securely stitched on the inner side of the waist (back side) of each 'Bermuda'. Care labeling instruction shall be given and it shall be fastened at the place of the 'Bermuda' as per the buyer instructions.

Following shall be marked on the cloth label:

(a) Name of the material, namely, 'Bermuda'
(b) Size in cm
(c) Any other information required by the buyer.

NOTE: The Indication on the cloth label shall be such that the colour from the label shall not bleed on the 'Bermuda' during storage or use.

7.0 PACKAGING & PACKING

The 'Bermuda' shall be packed in polyethylene or polypropylene bags and or in box, or as agreed between the buyer and seller. However, on each box the following shall be indicated:

(a) **Name of material**
(b) **Size in cm**
(c) **Quantity per box**
(d) **Indication of the source of manufacture and**
(e) **Any other information as required by the buyer or the law in force.**

8.0 SAMPLING AND CRITERIA FOR CONFORMITY

Sampling and criteria for conformity of the lot shall be as per the requirement of AP FIRE SERVICE DEPARTMENT.

9.0 Conditioning of test specimens and atmospheric conditions for testing:

The test specimen shall be tested in prevailing atmospheric conditions. In case of dispute, the sample shall be conditioned and tested in the standard atmosphere as given in IS 6359.

10. 0 REQUIREMENTS: The "Bermuda" shall conform to the requirements given in Table 3. The vendor shall supply extra raw materials for testing purpose, if required.

TABLE 3: Requirements of Bermuda

SI. No.	Characteristics	Requirements	Test Method
	Bright Red Knitted Fabric		
1	Approximate count of yarn (For guidance only),	150 Denier (100% multifilament Polyester, around 100 filaments)	IS 3442:1980
2	Blend composition, %	100% Polyester	IS 667: 1981 and IS 3416 (pt-1) :1988 (Dry mass basis)
3	Mass, gm/m^2	200±20	IS 1964:1970
4	Bursting Strength, Newton/cm^2	150±10	IS 1966: 1976
5	Colour fastness to washing - Change in colour - Staining on adjacent fabric	4 or better 4 or better	IS/ISO 105 C10 C(3) :2010
6	Colour fastness to perspiration - Change in colour - Staining on adjacent fabric	4 or better 4 or better	IS 971:1983

7	Colour fastness to rubbing - Dry - Wet	 4 or better 4 or better	IS 766:1988
8	Colour fastness to light	4 or better (on Blue wool)	IS 2454:1985
9	Dimensional Change due to relaxation, both directions, percentage, maximum	2.0	IS 2977:1989
10	pH value of aqueous extract	6.0-8.5	IS 1390:1983 (Cold method)
11	Colour	$\Delta Ecmc \leq 2.5$	See Table 4
Retro reflective Material			
12	Colour	Silver	Visual
13	Co-efficient of retro reflection for separate performance material (Normal state-without wash), cd/(lx.m^2), Minimum	330 (Coefficient of retro reflection at two rotation angles $\varepsilon 1=0^o$ and $\varepsilon 2=90^o$ should not differ) 15%	BS EN ISO 20471: 2013 (Observer angle 12', Entrance angle 5^o)

Table:4:



It is decided to procurement of OUTDOOR SUITs of Bright Red Colour consisting a pair of T-Shirt, Half-Bermula & Full Track(3 pieces).

FIRE RETARDANT COVERALL

Sl. No	Parameters	Specification
1	Colour Of Protective FR Rescue Suit	The garment should be made of 200 GSM (+/- 5GSM) fabric, in Khakhi / Orange / Red Colour.
2	Constructional Features Of The Protective IFR Suit	The protective IFR Rescue Suit made from inherently flame retardant fabric.
3	Fabric Requirements And Features	The fabric is comfortable, breathable for reduced heat stress and ability to wick away moisture (anti sweating), The fabric of the FR Recue Suit is soft comfortable finish, durable and capable of washing as well be colour fast. The Fabric should be Sweat Absorbent Fabric, Moisture Absorbency and Quick Drying Fabric. Made from a blend of inherent Fibers + 2-3% anti static Yarn. The fabric shall be made from a blend of meta araamide + paraaramide +permanently flame resistant fibres + 2-3% anti static yarn. The presence of Cotton, Nylon and Wool shall not be acceptable.
4	Design And Features Of IFR Overall	Front Closure: The Rescue Coverall has a heavy-duty moulded zip beneath a full length catch flap, closing with fire retardant Velcro meeting requirement stipulated in clause no 6.2.1 of BS EN ISO 11612 2015 or ISO 11612:2015(E)
5	Design And Features Of IFR Overall-1	High protective collar with throat guard of height 10 cm Epaulettes (Flap) on each shoulder.
6	IFR Overall (Dangri) Pockets Requirements	1st Pocket-Radio pocket on left chest with Velcro on flap closure. 2nd Pocket - Right chest, flap style with Velcro Closure. 3rd Pocket Open Pen Pocket on shoulder. 4th & 5th Pocket- Trouser cargo pocket at outer side of knee level (each side) with flap secured with Velcro closure.
7	Reflective Tape Requirements	The Rescue Suit has a high quality Fire Retardant reflective flame retardant tape provided with Single row minimum 50 mm width, on shoulder, forearms and below knee area.
8	Sizes & Markings/Stamping	The Department will be informed to the successful Bidder at the time of awarding the contract.
9	Compliance of the Protocols	Compliance to Anti Static property as per EN 1149-5

10	Performance Tests	Tensile strength as per ISO 13934-1 -> 750 Newton, Tear strength as per ISO 13937-2-≥ 75 Newton, Limited flame spread as per ISO 15025-level Al, A2, B1 and C1 as per EN ISO 11612 after testing as per EN ISO 6330 Standards. The Fabric should have a minimum Arc Rating of 8 cal/cm2 as per ASTM F1959 Standards. Colour Fastness to Light : Minimum 4 Colour Fastness to Rubbing : Minimum 4 The Shrinkage of the Fabric should not be more than 2% in Warp & Weft (Lower is preferred)

11	Testing Requirements	i) Limited flame spread as per ISO 15025-level Al, A2, B1 and C1 as per EN ISO 11612 after testing as per EN ISO 6330 Standards. ii) The Heat Resistance of the Fabric should be tested as per EN ISO 11612 after 5 washes as per ISO 6330:2012 Standards. iii) Contact Heat as per ISO 12127 -- level F1. iv) Tensile strength as per ISO 13934-1> 750 Newton. v) Tear strength as per ISO 13937-2 > 75 Newton. vi) Electrical resistance as per EN 1149-2 -- Pass class 2 vii) Impact of spatter drop as per ISO 9150 – Pass class 2 viii) The Fabric should have a minimum Arc Rating of 8 cal/cm2 as per ASTM F1959 Standards. ix) Colour Fastness to Light : Minimum 4. x) Colour Fastness to Rubbing : Minimum 4. xi) The Shrinkage of the Fabric should not be more than 2% in Warp & Weft (Lower is preferred).
12	Others	i) Garment should be able to withstand atleast Permanent Wash cycle without loosing the Fire retardant properties. (ii) At the Back side of Rescue Suit, Semi circle for AP Fire Reflective Yellow colour FR Strip of 2 inch wide to be provided. (iii) Embroidery of Logo on Left sleeve and Velcro on right chest for Name/ Tag etc. (iv) Different sizes will be confirmed at the time of the order.
13	Certification	i) Compliance as per Para-11. Test certificate from an NABL ILAC Third Party Independent lab shall be provided for total type examination of all part of the prepared/finished Dangri/ overall. ii) The Fabric should be a double Layered Structure Weaving Fabric. iii) The Fabric should be highly Breathable and Comfortable and be tested as per EN ISO 9237 for a minimum rating of >275mm. iv) The Fire Fighting Coat & Trouser should be accompanied by a currently valid BIS license as per IS 16890:2024 (Protective clothing for Fire fighters). The successful bidder shall have the same BIS license as per IS 16890:2024.

14	Colour	Postal Red.
15	Procurement Procedure	Through GeM Portal.
16	Bid Technical Documents	i) Certificates as mentioned in Para-13. ii) Certificates of Testing Parameters as mentioned in Para-11. iii) The bidder shall provide sample piece at the time of Technical Bid either by the bidder or any authorized person on behalf of him. The bidder who fails to produce the sample piece will disqualify in Technical Evaluation.

FIRE PROXIMITY SUIT (PPE)

1.	GENERAL REQUIREMENTS:
1.1	The Fire Proximity Suit (PPE):- 1) Coat & Trouser as per EN 469-2005 or latest, Level 2 certified, 2) Hand Gloves as per EN 659-2008 or latest certified and 3) Hood as per EN 13911-2004 or latest certified, 4) Helmet as per EN 443-2008, type B or latest certified 5) Fireman Boot as per EN 15090-2012 or latest certified. Tenderers who fulfill the qualification criteria below are eligible to Tender for this work.
1.2	This specification covers in general the design of Fire Fighting Suit level2, Gloves, Hood and Helmet, the minimum performance levels of the materials used and the methods of test for determining the performance levels. The PPE mentioned herein are used as the “Basic Turnout Gear” by the fire fighters for tackling incidents of fire. The intended purpose of this type of PPE is to provide maximum coverage to the wearer from heat and flash fire while fighting fire. The Structural Fire suit shall be worn over normal working clothes.
1.3	The Fire Fighter Coat shall be certified to EN 469:2005 level 2 or latest, CE marked & approved with article 11 (B) certification as per the European Union council Directive on Personal Protective Equipment (PPE) 89/686/EEC.
1.4	The Fire Fighter Trouser shall be certified to EN 469:2005 level 2 or latest, CE marked & approved with article 11 (B) certification as per the European Union council Directive on Personal Protective Equipment (PPE) 89/686/EEC.
1.5	Fire Fighter Gloves shall be certified to EN 659:2008 or latest, CE marked & approved with article 11 (B) certification as per the European Union council Directive on Personal Protective Equipment (PPE) 89/686/EEC.
1.6	Fire Fighter Hood shall be certified to EN 13911:2004 or latest, CE marked & approved with article 11 (B) certification as per the European Union council Directive on Personal Protective Equipment (PPE) 89/686/EEC.
1.7	Fire Fighter Helmet shall be certified to EN 443 : 2008, type B or latest, CE marked & approved with article 11 (B) certification as per the European Union council Directive on Personal Protective Equipment (PPE) 89/686/EEC.
1.8	The PPE articles shall be brand new, unused and of recent manufacture. Manufacturing date of PPE articles shall not be more than one year old at the time of inspection.

1.9	This specification is the guidelines for Fire Proximity Suits and generalized in nature, however the manufacturer shall comply all the requirements stipulated in the relevant EN standards.	
1.10	The front and back of the coat shall display letters and logos in photo luminescent paint duly printed on fire retardant outer shell material. Suitably fastened with Velcro or sewn with the outer fabric patch. Size of letter AP FIRE shall be proportionate with dimensions. On front of the coat the logo shall be printed. Actual print size to be submitted with QAP before supply of order.	
	GOVERNING STANDARDS :	
2.1	Coat and Trousers	
	Standard	Title
	EN 469 : 2005 or latest version	Protective clothing for Fire Fighters –Performance requirements for protective clothing for Fire Fighting.
2.2	Gloves	
	EN 659 : 2008 or latest version	Protective Gloves for Fire Fighters
2.3	Hood	
	EN 13911 : 2004 or latest version	Standard for Fire Fighter Hood
2.4	Helmet	
	EN 443-2008, type B or latest certified	Standard for Helmet
2.5	Fireman Boot	
	As per EN 15090 : 2012 or latest version for Fireman Boot	
	Colour	Yellow
	Size Range	38 to 48

	Material	Rubber compounds containing fire extinguishing additives, mixed FR cotton fabric lining giving increased abrasion resistance, sock lining increasing antistatic properties.
	Outsole	With steel anti-perforation insert, resistant to oil, fuels, acids and temperature to 250 Degrees C and antistatic construction.
	Insole	With anatomic replaceable innersole washable in water at 40 Degrees C, absorbing treads energy in heel.
	Weight	Approximately 2.4 kg per pair
2.6	Certificate: The boot should be CE certified meeting the requirements of EN 15090 Type,. The Test report for the compliance should be attached with the product.	
	It should also pass through Ralph Manikin Testing as per ISO 13506 : 2008. Necessary Test Report to be enclosed. The burn injury test report should be less than or equal to 10% for 1st , 2nd & 3rd Degree Burn for the acceptance.	
	Module D Certificate as per PPE Regulation (EU) 2016/425, showing name of the Manufacturer and complete Address of the place of Production Certifying PPE Category III Compliance is Mandatory.	
	Fireman Boot as per EN 15090-2012 or latest certified.	Fireman Boot for fire fighting in building and other structures.
3.	Technical Parameters :	

3.1	The Structural Fire Fighting Suit shall be designed so as to provide maximum protection to the wearer upper and lower torse, neck, arms, legs and shall meet all the requirement of EN-469: 2005 for Level-2 suit or Latest standard for Structural Fire Fighting.	
3.2	The Structural Fire fighting suit shall be easy to wear over the normal clothing without any help from others.	
3.3	In a non fire situation, the wearer shall be able to remain in the Structural Fire fighting Suit for prolonged periods and shall not feel any discomfort in environmental conditions.	
3.4	The complete Fire suit shall be water proof type and the design of the ensemble shall provide protection from ingress of water.	
3.5	The coat and trouser shall be designed to promote ease of cleaning and shall be capable of machine wash. Manufacturer should specify cleaning instructions/procedures in the user manual.	
3.6	The weight of the PPE articles i.e., Coat and Trouser shall not be more than 3.5Kg for the largest size.	
3.7	Gloves designed as per EN 659 : 2008 or latest version	
3.8	Hood designed as per EN 13911 : 2004 or latest version	
3.9	Helmet designed as per EN 443 : 2008 Type B or latest version	
3.10	Fireman Boot designed as per EN 15090-2012 or latest certified	
	Colour	Yellow
	Size Range	38 to 48
	Material	Rubber compounds containing fire extinguishing additives, mixed FR cotton fabric lining giving increased abrasion resistance, sock lining increasing antistatic properties.
	Outsole	With steel anti-perforation insert, resistant to oil, fuels, acids and temperature to 250 Degrees C and antistatic construction.
	Insole	With anatomic replaceable innersole washable in water at 40 Degrees C, absorbing treads energy in heel.
	Weight	Approximately 2.4 kg per pair

4.	Constructional Features :
4.1	The Structural Fire fighting Suit shall be designed to minimize restriction of movement. It shall be compatible with other equipment normally worn/carried by the fire fighter e.g. boots, helmet, gloves, belt for carrying fireman's axe and other equipment etc.
4.2	The Structural Fire fighting Suit set should be supplied in 1 carry bag containing following 4 components
	(i) Coat (ii) Trousers (iii) Gloves pair (iv) Hood (v) Fireman Boot
5.	Standard and test parameters for the Fire Fighter Coat and Trouser:
5.1	The Standard which governs coat and trouser shall be EN 469 : 2005/A1: 2006/AC: 2006 or latest with Level 2 performance Xf2, Xr2, Y2, Z2.
5.2	Test reports to be provided proving the performance level 2 for following test

	parameters.
	Heat Transfer flame Xf2
	Heat transfer radiation Xr2
	Resistance to water penetration Y2
	Water vapour resistance Z2.
5.3	Additional Test to be performed on Outer shell fabric for Anti static test as per EN 1149-3:2004 & EN 1149-5:2008 certificate needs to be provided.
5.4	Mannequin Test: Burn Mannequin Testing of RALPH mannequin test Stoll skin model to be performed on Fire suit model offered as per ISO:13506: 2008 to ascertain the heat transfer performance of clothing system and burn injury prediction analysis as per acceptable norms. Burn Injury prediction test report showing consolidated 2nd and 3rd degree burns results not exceeding 10% should be submitted along with the tender.
5.5	Certification : Coat and Trouser certified to EN 469:2005 level 2 or latest with following certifications. EN 469:2005 Certificate level 2 (EC Type Examination Certificate) CE certificate with Article 11 B certificate for ensuring EC Quality of Production. The Fire Fighting Coat & Trouser should be accompanied by a currently valid BIS license as per IS 16890:2024 (Protective clothing for Fire fighters). The successful bidder shall have the same BIS license as per IS 16890:2024.
6.	Design of Coat and Trouser
6.1	The minimum overlap of the coat with the trouser shall be 30 cm for all sizes.
6.2	The efforts shall be made to reduce the weight to barest minimum possible without sacrificing its utility & protection.
6.3	Two cargo pockets are required to be provided to the coat at the bottom in front portion with closure flaps fastened with fire retardant Velcro. Small sized drainage holes are required to be provided to drain accumulated water in the pockets.
6.4	The coat shall have a radio pocket of suitable size with a fire retardant Velcro flap on the left chest. The radio pocket shall also be provided with small sized drainage holes for drainage of accumulated water and capable of housing Walkie talkie available with fire brigade or as advised at time of PO). MFS logo also to be printed/embroidered on the radio pocket.
6.5	The coat shall be zip fastened with a heavy-duty corrosion resistant zipper extending from throat tab till the bottom of the coat. The zip shall be overlapped with a protective flap made from the same fabric used for outer layer of the coat.
6.6	The height of the coat collar shall be minimum 80 mm and will also have a closure strap (fire retardant Velcro) at the front to ensure complete protection to the neck
6.7	The trouser and coat shall incorporate 1 mm thick neoprene coated aramid blend (for example pararamide/meta-aramide) reinforcement to the knees, elbows and bottom portion of the trouser respectively for additional protection against wear and tear.

6.8	The suit (coat and trouser) shall incorporate heat reflective & retro-reflective tape as per fire brigade design for better visibility in smoke filled/dimly lit spaces.

6.9	The width of the heat reflective & retro-reflective tape shall not be less than 5 cm with triple reflective trim of fluorescent yellow/silver/yellow colour for staff and orange/silver/orange colour for officers.
6.10	The quality of reflective tape to be used in the coat & trousers should comply with the relevant EN standards requirements preferably of 3M quality.
6.11	Hardware such as buttons clips should be fixed only on the fabric layers and should not be any direct contact with the wearer body when the coat or trouser worn with closures fastened.
6.12	The trouser shall be made from the similar three layers of construction as used in the coat. Further the trouser should be provided with flexible & extendable FR suspender system which can be worn securely over the shoulder of the wearer. The trouser shall be provided with one cargo pockets on each thighs with closure flaps fastened with fire retardant Velcro. Small sized drainage holes are required to be provided to drain accumulated water in the pockets.
6.13	The trouser shall be provided with zipper, concealed by a flap of the outer shell.
6.14	The trouser shall be provided with concealed FR elastic at the waist level for firm fit with FR button.
6.15	The seams of the trouser and coat shall be stitched from inherent flame retardant sewing thread in such a manner that the seams are not exposed from outside flame. Further, the seams should be sealed from inside with suitable moisture barrier tape to ensure no ingress of water.
6.16	An integral wristlet with thumb loop is required to be provided at the end of the coat sleeves and shall be designed primarily to prevent entry of burning debris and shall also provide limited thermal protection to the wrist. The wristlet shall not hinder donning of the coat and shall be compatible with wearing of protective gloves.
	Design of Gloves :
7.1	The Standards which governs Gloves shall be EN 659 : 2008 or latest CE marked and approved with article 11 (B) certification. The Fire Fighting Gloves should be accompanied by a currently valid BIS license as per IS 16874 :2018 (Protective Gloves for Fire fighting)
7.2 (i)	The gloves shall be made of materials in multilayer (4 layers) offering good protection and designed to provide protection to the hands with elastic closure mechanism at the wrist.
7.2 (ii)	The outer layer shall be made from Heat resistant Leather or Neoprene coated Para-aramide in front and Meta-aramide at the back portion.
7.2(iii)	The second layer shall be made from Aramide knit fabric.
7.2(iv)	The third layer shall be made from membrane
7.2(v)	The fourth layer shall be Non-woven meta-aramid thermal layer.
7.3	The gloves shall have a Kevlar/Aramid /Nomex knitted wristlet.
7.4	The Gloves shall be provided with Reflective tape as per EN standards preferably of 3M make.
7.5	The Glove shall offer resistant against heat, water and abrasion and it shall also ensure maximum sensitivity and comfort for work.

7.6	The gloves shall be of five fingers
7.7	The Gloves should carry the requisite label showing model name, EN 659:2008 with Test House No, CE logo, OEM information and size offered.
7.8	The size of the gloves shall be as per individual size of the employee which will be collected by the supplier.
7.9	Certification: The Gloves shall be certified to EN 659 : 2008 or latest with following

8.	Certification for Hood: The Hood should be EN approved as per EN 13911 and CE marked. Module D certificate as per PPE Regulation (EU) 2016/425 for the Hood showing the place of manufacture.
9.	Pre-Dispatch Inspection: Pre-Dispatch Inspection shall be carried out by the representative from Andhra Pradesh State Disaster Response and Fire Services Department.

Annexure-XXVII
Victim Location Camera with Breaching System

Technical Specifications and TDs of Victim Location Camera with Breaching System

S/ No	Specification	Requirement	Trial directives
1.	**Temperature Range**	The system should be capable of operation in a temperature range of -10^0 to $+50^0$ C.	BOOs to check and verify the parameter through NABL or Govt approved lab certificate/OEM certification
2.	**Camera Capability**	Minimum 4-megapixel colour video camera fitted with LEDs to illuminate minimum 5 meters in total darkness and provide clear video & images.	BOOs to physically check the measurable parameter and other parameter through NABL or Govt approved lab certificate/OEM certification
3.	**Battery**	The batteries must be capable of 3 hours of continuous use and the charger should recharge them up to 90% in less than three hours as per given QRs/ Specifications, after being used continuous for 3 hours in field.	BOO to physically check and verify the parameter

4.	**Display**	i. Two display monitors: min. 7 inch at operator level & min. 10 inch for remote viewing at least 20 mtrs away. Wired or wireless.
		ii. Integrates two-way audio.
		iii. Touch screen display with high-resolution TFT LCD/LED.
			For (i & ii) BOOs to physically check the parameters.
			
			For (iii) BOOs to physically check the parameter and also to check NABL or Govt approved lab certificate/OEM certification

5.	**Language Support**	Hindi or English(Both are eligible)	BOOs to physically check and verify the parameter
6.	**Video Image**	i. Sensor: Minimum Four Megapixel CMOS Sensor. ii. Image Resolution: HD Quality. iii. Video Resolution: HD Quality.	BOOs to check and verify the parameters through NABL or Govt approved lab certificate/OEM certification
7.	**Zoom**	Digital Zoom: Min 4X Storage: 32 GB for video storage	BOOs to physically check and verify the parameters.
8.	**Water Resistance**	Minimum IP 64 or better	BOOs to check and verify the parameter through NABL or Govt approved lab certificate/OEM certification
9.	**Humidity**	Operational range - 10% to 90% relative humidity	BOOs to check and verify the parameter through NABL or Govt approved lab certificate/OEM certification
10.	**Features**	i. Complete victim location system with camera mounted on a rigid telescopic frame extendable to length >6m. ii. Articulating pole up to 180 degree angle or better. iii. Diameter of camera and pole should be less than the diameter of the bit of the breaching system.	BOOs to physically check and verify the parameters.
11.	**Accessories**	i. Separate remote hard-wired display monitor with extension cable to 20m. OR **Separate remote wireless display monitor**	BOOs to physically check and verify the parameters.

S/ No	Specification	Requirement	Trial directives
		ii. Carrying Harness: Ergonomic harness for hands-free operation and comfortable transport.	
12.	**Power Head Weight**	Not more than 12 kgs	BOOs to physically check and verify the parameter.
13.	**Boring Speed**	i. Standard construction concrete grade may be specified as **M25 to M40** ii. The breaching system should be able to bore through min of **10 cm thick standard grade construction concrete** of grade M25 to M40. The boring speed of the breaching system should not be less than **2.5 cm per minute** in standard construction concrete of grade M25 to M40.	i) BOO to check and verify the parameter by using the breaching system on standard construction concrete grade i.e. M-25 to M40 (Slabs to be casted accordingly for evaluation) ii)BOO to physically measure and verify the parameter iii)BOO to physically check and verify the parameter
14.	**Bits**	Minimum diameter of 51mm and minimum length of 432mm for diamond and carbide stubbed bits.	BOOs to physically check and verify the parameter.
15.	**Cooling**	Pressurized water can, min 8 Ltr capacity with not less than 3 m hose with quick connect fittings.	BOOs to physically check and verify the parameter.
16.	**Field Service Kit**	i. Spare fuel tank cap ii. Spare pre-wound starter recoil assembly iii. 2-piece key set for starter assembly iv. Spare spark plug v. Spare plug wrench vi. Copper washer vii. Garden hose to water collar adapter	BOOs to physically check and verify the items mentioned in kit.
17.	**Spindle**	As per manufacturer standard.	BOOs to physically check and verify the parameter.
18.	**Breaching Depth**	Maximum 2 extensions to achieve a length of 1m from Breaching system	BOOs to physically check and verify the parameter.
19.	**Dry Weight of Equipment**	Dry Weight- Maximum 17 Kgs (Which includes maximum weight of telescope probe with camera - 05 Kgs and maximum power head weight - 12 Kgs	BOOs to physically check and verify the weight.
20.	**Guarantee/Warranty/Service Support**	i. The bidder should be able to conduct the repairs of the tools post warranty (minimum one year) period for minimum ten years at a place as specified in the bid. ii. Bidder / OEM to provide an undertaking for the same.	OEM/Bidder to provide undertaking for the same.
21.	**Training**	i. Two days base workshop level training to NDRF personnel in OEM/Firm premises/Location in India, on full-fledged running, testing, diagnostic, trouble shooting and maintenance. ii. 1 day operator level training should be provided at user defined location.	OEM/Bidder to provide undertaking for the same.

S/ No	Specification	Requirement	Trial directives
22.	**Carry Case**	Injection molded ABS case with safety compartment inside.	BOOs to check and verify the parameter through OEM certification.

ANNEXURE-XXVIII

1.(b) Strengthening of Training Centres & Capacity Buildings
(Note: The indicative list of items and equipment for Training Centre is conveyed to the States vide letter dated 5th September,2023

Sl. No	List of item & Equipment identified for Training Centre	Quantity proposed	Proposed Specification for such items (IS Code)	Schematic drawing /design, wherever applicable	Estimated Cost (in Lakhs)	Reasonability of estimated cost	Ground / Justification for Training items and equipment proposed	Annual Training target of the State
1	2	3	4	5	6	7	8	9
	CSSR AND MFR EQUIPMENT							
1	Hydraulic Telescopic	01 Nos.	for Training Purpose	Not Applicable	3.00	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
2	Hydraulic Combination tool	01 Nos.	10481:2002	Not Applicable	8.50	Reasonable Item.	For Conducting Trainings internal & External must require	The internal and External Trainings Conducted in every year as per the calender

							d	of the Chief Office.
3	Hydraulic IC Engine Pump	02 Nos.	ISO 15550:2002	Not Applicable	1.00	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
4	Hydraulic Door Opener	02 Nos.	3564 : 1995	Not Applicable	0.80	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
5	Power Saw	03 Nos.	for Training Purpose	Not Applicable	0.60	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief

								Office.
6	Stihl Cut off Machine	02 Nos.	for Training Purpose	Not Applicable	0.40	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
7	Circular Saw	04 Nos.	for Training Purpose	Not Applicable	0.60	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
8	Heavy Duty Cutter for Concrete and Metal	02 Nos.	for Training Purpose	Not Applicable	4.00	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief

								Office.
9	Pulling and lifting machine with necessary hooks and ropes	01 Nos.	for Training Purpose	Not Applicable	0.15	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.

1	2	3	4	5	6	7	8	9
10	Rubber gloves tested to 25000 volts	36 Nos.	4770: 1991	Not Applicable	0.18	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
11	High safety boots	20 Nos.	5852 : 2004	Not Applicable	0.30	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
12	Hydraulic Jack(15 tons capacity)	01 Nos.	14671 :1999	Not Applicable	1.00	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
13	Glass breaker	02 Nos.	for Training Purpose	Not Applicable	0.10	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.

14	Asbestos gloves	05 Nos.	6994 (Part 1) - 1973	Not Applicable	0.20	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
15	Traffic guide conica	10 Nos.	for Training Purpose	Not Applicable	0.10	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
16	Safety belt with hook	02Nos.	3521 : 1999	Not Applicable	0.40	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
17	Aska Inflatable Tower Light	01 Nos.	for Training Purpose	Not Applicable	3.20	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
18	Medical	05	4037:196	Not Applica	0.20	Reasonable	For Conductin	The internal and External

	Stretcher	Nos.	7	ble		Item.	g Trainings internal & External must required	Trainings Conducted in every year as per the calender of the Chief Office.
19	Grass cutter	02 Nos.	for Training Purpose	Not Applicable	0.30	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
	Total				**25.03**			
	MFR EQUIPMENT							
1	Adult CPR Manikin	02 Nos.	for Training Purpose	Not Applicable	0.70	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.

1	2	3	4	5	6	7	8	9
2	OB Manikin	01 Nos.	for Training Purpose	Not Applicable	0.70	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
3	Child CPR Manikin	02 Nos.	for Training Purpose	Not Applicable	0.50	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
4	Emergency Rescue Stretcher	02 Nos.	4037:1967	Not Applicable	0.20	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
5	Emergency MFR Kit	02 Nos.	for Training Purpose	Not Applicable	0.80	**Reasonable Item.**	For Conducting Trainings internal & External	The internal and External Trainings Conducted in every year as per the calender of the Chief

							must required	Office.
6	Pneumatic Splint set	04 Nos.	for Training Purpose	Not Applicable	1.20	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
7	Padded wooden splint (Small)	10 Nos.	for Training Purpose	Not Applicable	0.30	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
8	Padded wooden splint (Medium)	10 Nos.	for Training Purpose	Not Applicable	0.60	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
9	Padded wooden splint (Large)	10 Nos.	for Training Purpose	Not Applicable	0.80	**Reasonable Item.**	For Conducting Trainings internal	The internal and External Trainings Conducted in every year as per the

							& External must required	calender of the Chief Office.
10	Flexible splint	05 Nos.	for Training Purpose	Not Applicable	0.75	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
11	Face shield	10 Nos.	for Training Purpose	Not Applicable	0.08	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
12	Oral airway set	02 Nos.	for Training Purpose	Not Applicable	0.03	**Reasonable Item.**	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.

1	2	3	4	5	6	7	8	9
13	Ambu bag	02 Nos.	for Training Purpose	Not Applicable	0.04	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
14	Child Ambu bag	02 Nos.	for Training Purpose	Not Applicable	0.04	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
15	Elastic bandage	10 Nos.	for Training Purpose	Not Applicable	0.10	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
16	Triage ribbon Green (2.5X50)	04 Nos.	for Training Purpose	Not Applicable	0.20	Reasonable Item.	For Conducting Trainings internal & External	The internal and External Trainings Conducted in every year as per the calender of the Chief

							must required	Office.
17	Triage ribbon Red (2.5X50)	04 Nos.	for Training Purpose	Not Applicable	0.20	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
18	Triage ribbon Black (2.5X50)	04 Nos.	for Training Purpose	Not Applicable	0.20	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
19	Triage ribbon Yellow (2.5X50)	04 Nos.	for Training Purpose	Not Applicable	0.20	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
20	Tongue depressor	04 Nos.	for Training Purpose	Not Applicable	0.04	Reasonable Item.	For Conducting Trainings	The internal and External Trainings Conducted in every year as

							internal & External must required	per the calender of the Chief Office.
21	Sterile gloves (Medium & Large)	02 Nos.	for Training Purpose	Not Applicable	0.06	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
22	Oxygen canula	04 Nos.	for Training Purpose	Not Applicable	0.30	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
23	Oxygen Adult mask	10 Nos.	for Training Purpose	Not Applicable	0.15	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.

1	2	3	4	5	6	7	8	9
24	Oxygen Child mask	10 Nos.	for Training Purpose	Not Applicable	1.00	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
25	Bandage	20 Nos.	for Training Purpose	Not Applicable	0.30	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
26	Triangular bandage	20 Nos.	for Training Purpose	Not Applicable	0.50	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
27	Stethoscope	02 Nos.	for Training Purpos	Not Applicable	0.90	Reasonable Item.	For Conducting Trainings internal &	The internal and External Trainings

			e				External must required	Conducted in every year as per the calender of the Chief Office.
28	Blood pressure cuff	04 Nos.	for Training Purpose	Not Applicable	0.50	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
29	Case stiff neck collar	02 Nos.	for Training Purpose	Not Applicable	0.10	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
30	Cervical collar (Medium & Short)	04 Nos.	for Training Purpose	Not Applicable	0.10	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.

31	Collar stiff neck pediatric	04 Nos.	for Training Purpose	Not Applicable	0.40	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
32	Collar stiff neck tall	04 Nos.	for Training Purpose	Not Applicable	0.27	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
33	Spine board (Stretcher)	06 Nos.	for Training Purpose	Not Applicable	2.10	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
34	Scissors 7.5 Inch	05 Nos.	for Training Purpose	Not Applicable	0.03	Reasonable Item.	For Conducting Trainings internal & External must	The internal and External Trainings Conducted in every

							required	year as per the calender of the Chief Office.

1	2	3	4	5	6	7	8	9
35	Cotton adhesive tape	10 Nos.	for Training Purpose	Not Applicable	0.10	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
36	Microspore Cotton adhesive tape	10 Nos.	for Training Purpose	Not Applicable	0.05	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
37	Band-aid	10 Nos.	for Training Purpose	Not Applicable	0.10	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
38	First Aid Kit	03 Nos.	13115 : 1991	Not Applicable	0.06	Reasonable Item.	For Conducting Trainings	The internal and External Trainings Conducted

							internal & External must required	in every year as per the calender of the Chief Office.
39	Restrain patient belt	06 Nos.	for Training Purpose	Not Applicable	0.30	Reasonable Item.	For Conducting Trainings internal & External must required	The internal and External Trainings Conducted in every year as per the calender of the Chief Office.
	Total				**15.00**			
	Grand Total				**#REF!**			

1. Hydraulic Telescopic Ram

- Minimum Working Pressure : Not less than 500 bar
- Minimum Spreading Force of First plunger : Not less than 20 Tons
- Minimum Spreading Force of Second Plunger : Not less than 10 Tons
- Minimum retracted Length : Not more than 700mm
- Maximum Extended Length including cross head : Not more than 1500mm
- Minimum Stroke of 1st plunger : Not less than 400mm
- Minimum Stroke of 2nd plunger : Not less than 400mm
- Weight : Not more than 18 Kgs

[EN: 13204 Certificate]

8. Hydraulic Cutter

- Minimum Working pressure : Not less than 700 bar
- Minimum Cutting Force in the recess : Not less than 100 Tons
- Minimum round bar Cutting Cap : Not less than 40mm dia
- Minimum blade opening : Not less than 20mm
- Weight : Not more than 20 Kgs

[EN: 13204 Certificate]

9. Pneumatic lifting Air Bags (flat type)

Lifting capacity	Min. Inflation height (mm)	Weight (not more than) Kgs
Up to 30 tons	300-400	10
More than 30 tons	400-500	20

- Pressure reducer 300 bar to 8 bar.
- Control box for operating 2 airbags with pressure gauges ad carrying strap.
- Air Hose 5 Mtrs.
- Air Hose 10 Mtrs.
- Shut off hose with safety valve.
- Connection piece to connect two air cylinders.

119. AIR WAY ORAL SET 60/80/100 MM

Specifications

Qualitative Requirements	Picture of Equipment
1. Size: set of 60 mm/70 mm/ 80 mm/90 mm/100 mm 2. Material: good quality plastic; disposable airways 3. Colour coded for different sizes; 4. In sets of above sizes in sterilized packs	

120. BAG VALVE MASK- ADULT (DISPOSABLE)

Specifications

Qualitative Requirements	Picture of Equipment
1. Size : Adult; disposable rubber vinyl bag of 1600 ml capacity 2. Components: self-inflating compressible rubber/ vinyl bag of 1600 ml capacity, one way inflation valve, face mask, oxygen reservoir, 3. Oxygen port and connecting tube 4. Material: high quality plastic/vinyl transparent and for single use; 5. Transparent soft pre inflated plastic face mask 6. Good quality connecting tube of 3 meter length 7. Standardized 15/22 mm fittings 8. Adjustable hook and loop handle 9. Collapsible body and reservoir 10. PEEP valves/elbows included; non jam valve with maximum 11. Oxygen flow of 15 L/minute 12. Single use sterilized and disposable pack	

121. BAG VALVE MASK- CHILD(DISPOSABLE)

Specifications

Qualitative Requirements	Picture of Equipment
1. Size: Child; disposable rubber vinyl bag of 500 ml capacity 2. Components: self-inflating compressible rubber/vinyl bag of 500ml capacity, one way inflating valve, face mask, oxygen reservoir, oxygen port and connecting tube. 3. Material: high quality plastic/vinyl transparent and for single use; 4. Transparent soft pre inflated plastic face mask 5. Good quality connection tube of 3 meter length 6. Standardized 15/22 mm fittings 7. Adjustable hook and lop handle 8. Collapsible body and reservoir 9. PEEP valves/elbows included; non jam valve with maximum Oxygen flow of 8-10 L/minute or more 10 Single use sterilized and disposable pack	

96. BAND AID 1" X 3" PACKETS

Specifications

Qualitative Requirements	Picture of Equipment
a)Dimensions: 2 cm x 7 cm rectangular with central medicated pad b) Containing Benzalkonium chloride BP 0.5 % W.W c) Wash proof and hypoallergenic adhesive bandage d) Sterilized single packs	

113. BANDAGE ELASTIC 3" ACE

Specifications

Qualitative Requirements	Picture of Equipment
1. Material: elastocrepe bandages of good quality; fabricated form 2. Synthetic fibres and of good elasticity; 3. Dimensions: 15 cm x 2.7 meters	

114. BANDAGE ELASTIC 6" ACE

Specifications

Qualitative Requirements	Picture of Equipment
1. Material: elastocrepe bandages of good quality; fabricated from Synthetic fibres and of good elasticity; 2. Dimensions: 15 cm x 2.7 meters	

99. BANDAGE TRIANGULAR 40" X 40"

Specifications

Qualitative Requirements	Picture of Equipment
Dimensions: 90 x 90 x 120 cm size bandage Material: good quality calico material	

70. BITE STICKS

Specifications

Qualitative Requirements	Picture of E
a) Material: plastic b) Length: 6 inches c) Width: 0.5 to 0.75 inches d)Thickness 2-3 mm at one end tapering to 05. mm at other end with Good grip e) Used to removes stings from epidermis of skin	

71. BLOOD PRESSURE CUFF ADULT WITH DIAL

Specifications

Qualitative Requirements	Picture of E
a) Type Adult –Dial type b) Tube length: 20 - 22” c) Cuff width: 5” – 6” d) Bladder insider cuff should fit in properly e)Material synthetic cloth with non Velcro fixing; Hook; and durable bulb inflator. f) ISI market and standard calibration of 0-300 mm	

72. CASE STIFF NECK COLLAR

Specifications

Qualitative Requirements	Picture of E
a)Rigid cervical collar extrication type. b) Material : soft plastic rigid enough to avoid 70% of neck movement and lined inside with soft cushion. c) Padded chin rest for application by sweep technique d) Colour coded and measure holes for easy identification. e) Measurement of correct size. f) Velcro for easy fixation. g) MRI/Ct Scan compatible ; Radio lucent h) Tracheal access opening for advanced airway procedures i) Rear panel opening for cervical spine palpation. j) Latex free and durable.	

75. COLLAR STIFF NECK ' NO NECK'

Specifications

Qualitative Requirements	Picture of Equipment
COLLAR STIFF NECK (NO NECK) (AS PER IS: 11569) a) Rigid cervical collar- extrication type b) Material: soft plastic rigid enough to avoid 70% of neck movement and lined inside with soft cushion. c) Padded chain rest for application by sweep technique. d) Colour coded and measure holes for easy identification and me of correct size. e) Velcro for easy fixation. f) MRI/CT Scan compatible; radio lucent g) Tracheal access opening for advanced airway procedure; h) Rear panel opening for cervical spine palpation g) Latex free and durable i) The size of finished c-collar should not be less than 3 cm when measurement as per prescribed procedure.	

76. COLLAR STIFF NECK PAEDIATRIC

Specifications

Qualitative Requirements	Picture of Equipment
(AS PER IS: 11569) a) Rigid cervical collar- extrication type b) Material: soft plastic rigid enough to avoid 70% of neck movement and lined inside with soft cushion. c) Padded chain rest for application by sweep technique. d) Colour coded and measure holes for easy identification and measured of correct size. e) Velero for easy fixation. f) MRI/CT Scan compatible; radiolucent g) Tracheal access opening for advanced airway procedure; h) Rear panel opening for cervical spine palpation i) Latex free and durable.	

74. COLLAR STIFF NECK REGULAR

Specifications

Qualitative Requirements	Picture of Equipment
COLLAR STIFF NECK REGULAR(AS PER IS: 11569) a) Rigid cervical collar-extrication type b) Material: soft plastic rigid enough to avoid 70% of neck movement and lined inside with soft cushion. c) Padded chain rest for application by sweep technique. d) Colour coded and measure holes for easy identification and measurement of measured of correct size. e) Velcro for easy fixation. f) MRI/CT Scan compatible; radio lucent g) Tracheal access opening for advanced airway procedure; h) Rear panel opening for cervical spine palpation i) Latex free and durable j) This size of finished c-collar should not be less than 6 cm when measurement as per prescribed procedure.	

73. COLLAR STIFF NECK SHORT

Specifications

Qualitative Requirements	Picture of I
CERVICAL COLLAR SHORT (AS PER IS: 11569) a) Rigid cervical collar-extrication type b) Material: soft plastic rigid enough to avoid 70% of neck movement and lined inside with soft cushion. c) Padded chain rest for application by sweep technique. d) Colour coded and measure holes for easy identification and measurement of correct size. e) Velcro for easy fixation. d) MRI/CT Scan compatible; radio lucent e) Tracheal access opening for advanced airway procedure; f) Rear panel opening for cervical spine palpation g) Latex free and durable h) The size of finished c-collar should not be less than 4.5 cm when measurement as per prescribed procedure.	

77. COLLAR STIFF NECK TALL

Specifications

Qualitative Requirements	Picture of Equipment
(AS PER IS: 11569) a) Rigid cervical collar- extrication type b) Material: soft plastic rigid enough to avoid 70% of neck movement and lined inside with soft cushion. c) Padded chain rest for application by sweep technique. d) Colour coded and measure holes for easy identification and measured of correct size. e) Velcro for easy fixation. f) MRI/CT Scan compatible; radiolucent g) Tracheal access opening for advanced airway procedure; h) Rear panel opening for cervical spine palpation i) Latex free and durable. j) This size finished c-collar should not be less than 10 cm when measurement as per prescribed procedure.	

100. CUP PAPER HOT/COLD 8 OZ (PACKET OF 100)

Specifications

Qualitative Requirements	Picture of Equipment
1. Material: Disposable paper cups of Styrofoam with smooth rounded upper edge 2. Capacity 200 ml 3. Versatile for both hot and cold liquids.	

130 . DELUXE OB MANNEQUIN



Specifications

Qualitative Requirements
It is used to import training of normal delivery and childbirth complications. It should have a model of female abdomen with abdomen layer as a non transparent flap, which should have an arrangement to attach with the remaining portion of the model by press button. Consists of 07 parts:- **MAIN BODY** 1. Should be made up of rubber showing the landmark of lumber, sacrum, spine, pubic symphisis , pelvic girdle, with oval shaped perineum opening with a dia of 13-15 cms. 2. Both the thigh should be upward raised and apart. 3. The main body should be covered from abdomen to perineum. 4. Length of the main body – 35 to 40 cms 5. Depth of the main body showing abdomen 10 to 12 cms. **ABDOMEN LAYER** 1. It should be meant to cover the hollow abdominal space of the main body . It should be made up of non-transparent rubber flap, which should have an arrangement to attach with the main body with press buttons. 2. It must have the provision for the cavity so that uterus and foetus can be placed in abdominal layer to simulate the pregnancy. **UTERUS** 1. It should be a hollow plastic bag containing a fetus shaped baby made up of rubber. 2. It should be a shape that it could be placed inside the abdominal layer to look like a pregnant lady. 3. There should be preservative inside the uterus. **INFANT** 1. It will be used to show simulated delivery. 2. It should be hollow. 3. Made up of rubber with a facility for filling air with an air valve

attach with foot.

4. A provision to attach umbilical cord over navel point.

5. A separate manual air-filling pump should be provide to fill air in the infant

6. Length of the infant- 50 to 60 cms.

UMBILICAL CORD

1. It should be made up of flexible plastic tube.

2. Length of the tube: 65 to 75 cms

3. Dia of the tube: 2 to 2.5 cms

4. It should contain a facility to attach with the navel of the infant at one end and to attach with placenta at the other end.

PLACENTA

A disc shaped placenta should be made up of good quality of rubber

Having its colour and impression with a provision to attach the umbilical cord with it.

PERINEUM FLAP

1. It should be made up of rubber for covering perineum opening with a facility to attach and detach with perineum.

2. Perineum should have an cut (Vaginal Opening) so that could show the impression of vaginal opening.

101. DEPRESSOR- TONGUE

Specifications

Qualitative Requirements	Picture of Equipment
1. Soft wood of 0.5" wide and 6" length 2. Adult size; 3. Sterilized and packed to maintain sterilization	

79. DRESSING ABDOMINAL 7 1/2"

Specifications

Qualitative Requirements	Picture of Equipment
a) Size 7 ½" x 7 ½ " b) Strength : 12 ply with good absorbent quality gauze and cotton c) Layer in between d) Package: pre sterilized ready to use individual packs	

82. DRESSING MULTI TRAUMA 12" X 3"

Specifications

Qualitative Requirements	Picture of Equipment
i) Size 12" x 3" ii) Layers: of 16 ply of good absorbent quality gauze with cotton In between. iii) Thickness: at least of 5 cm. iv) Package: Presterilized packs of 3 pieces/pack; ready to use.	

125. EMERGENCY ACCIDENT KIT



Specifications

1. Thermometer 96F-107 F
2. Bandage Scissors
3. Splinter Forceps
4. Insect Repellent
5. 20cc. Irrigation Syringe
6. Wound Closure Strips (10)
7. Povidone Iodine (1oz)
8. Tincture of Benzoic (2)
9. Double Antibiotic Ointment (4)
10. Antiseptic Towel letters (6)
11. Moleskin'
12. Nitrite Examination Gloves (2)
13. Antimicrobial Hand Wipes
14. Infectious Control Bag
15. Dressing (8)
16. Non-adherent sterile dressing (2)
17. 5"x9" Trauma Pad
18. Conforming Gauze Bandage
19. Adhesive Tape, 10 yards
20. Strips and knuckle bandages (15)
21. Cotton Tipped Applicators (4)
22. Oral Dehydration Salts
23. Extra strength Tyleno ® (8)
24. Motrin ® (8)
25. Antihistamine (4)
26. Advil Cold ® (4)
27. Diamode (Imodium ®) (6)
28. Aloe vera gel
29. 5-0 nylon suture w/cutting Needle
30. 1cc syringe with needle
31. 3cc syringe
32. 25 gauge x 5/8" needle
33. 18 Gauge x 1.5" Needle
34. 21 Gauge x 1.5 "Needle
35. Angiocatheter 18 g
36. Safety Pin (3)
37. Accident Report & Pencil

Emergency Accident Kit Specification.
Prefilled Syringes :
Atropine 10 ml o.1 mg/ml protected needle (2)
Dextrose 50% , 50 ml 500 mg/ml protected needle (1)
Diazepam 2ml 5mg/ml carpujects ® (2)
Epinephrine 10 ml 1:10, 000 20ga protected needle (3)
Lidocaine 2% 5 ml 20 mg/ml 20 ga protected needle (2)
Sodium Bicarbonate 8.4 %

50 ml 50 m Eq 18 ga protected needle (1)

AMPULES :

Diphenhydramine 1 ml 50 mg/ml (2)
Epinephhrine 1 ml 1:1,000 (1mg/ml) (3)
Lanoxin 2ml , 25 mg/ml (1)
Naloxone 1 ml 0.4 mg/ml (2)
Phenergan 1 ml 25 mg/ml (2)

VIALS:

FUROSEMIDE 2 ML 10 MG/ML (2)
PROCAINAMIDE 10 ML 100 MG/ML Vial (1)
Solu_Cartef 250 mg 125 mg/ml act o-vial (1)

CAPSULES & TABLETS

Aspirin Tablets (4)
Clonidine Tablets o.1 mg (2)
Diphenhydramine 25 mg Tablets (4)
Nitroglycerin Tabs 25 tabs 0.4 mg 1/150 gr (1)

MISCELLANEOUS

Activated charcoal 25 gr (1)
Albuterol Inhaler 17 gr (1)
Ammonia Inhalant spiral 0.3 ml (2)

SAFETY SYRINGES & NEEDLES :

10 cc w/2 1 ga x 1 ½" (1)
10 cc w/22 ga x 1 ½" (1)
2 cc w/20ga x 1 ½" (1)
3 cc w/21ga x 1 ½" (1)
3 cc w/22 ga x 1" (1)
3 cc w/25 ga x 5/8" (1)

I.V. EQUIPMENTS:

0.9% Sodium chloride, 500 ml (1)
I.V. Administration Tubing (1)
I.V.Catheter 20ga x 1" (2)

SURGICAL INSTRUMENTS :

Alcohol Sponges (2)
Gauze 3x3 (2)
Gloves, Nitride (1 pair)
Haemostat (2)
Needle Holder (1)
Scalpel (1)
Scissures (1)
Sutures
Proline (1)
Vicryl (1)
Tape (1)
Thumb Forceps (1)
Tourniquet (1)

AIRWAYS EQUIPMENTS:

End tracheal Tubes w/style
3mm (1)
5mm (1)
7mm (1)

Laryngoscopes
Large (1)
Small (1)
Interchangeable light source (1)
Air ways
Small (1)
Medium(1)
Large (1)
Micro shield Mask (1)
(included in model 700 only)

MONITORING EQUIPMENTS:

Sphygmo (1)
Stethoscope (1)

ORGANIZATIONAL MATERIALS

American Heart Assn. Algorithms (1)
Quarterly Inspection Record (1)
Plastic Seals (4)
Reorder Form (1)
Treatment Tag (1)

DIMENSIONS OF THE STAT KIT 700:

1/8" X 17 ¼" X 19 7/8"

Weight: 16 pounds

STATS KIT 900 ADDITIONAL CONTENTS

Resuscitation Equipments
Resuscitator w/Adult Mask (1)
RES-Q-VAC Suction Unit (1)

OXYGEN EQUIPMENT

Aluminium "C" cylinder w/toggle handle (1)
Oxygen Mask, w/strap & non-re breathing bag b (1)
Oxygen Tubing (1)

OPTIONAL ACLS DRUGS:

Amiodarone 3ml 50 mg/ml ampule (2)
Vasopressin 10ml 20 units vial (2)
Portable carrying case

124. EMERGENCY RESCUE STRETCHER

Specifications

Qualitative Requirements	Picture of Equipment
The Stretcher should have following features:- a)Foldable and compact with built-in flotation. b)Colour coded patient restrain straps with double locking Quick release safety buckles and built in head restraints system. c)Corrosion resistant stainless steel frame with cover and case. d)Vertical hoisting sling. e)Individual replacement components. f)Weight should not be more than 20 Kgs.	

122. ***FLEXIBLE SPLINTS LARGE/ MEDIUM/ SMALL***

Specifications

Qualitative Requirements	Picture of Equipment
1. Material light weight , radio lucent, mouldable 2. Water Proof and body fluid poof. 3. Portable light weight padded flexible splints of three sizes and reusable, 4. Standard and junior sets with all three sizes 5. Velcro strapped for easy application and removal	

95. FULL KIT BAG HARD

Specifications

Qualitative Requirements	Picture of Equipment
a) Material: thermosetting, plastic; non breakable box b) Dimensions: 24" x 12" x 18" c) Locking mechanism: Press lock and quick release clamps d) Centrally located handle with side holds also box to open from e) Central top as well one of the sides f) Sliding compartments inside with at least 2 trays one 4" from top g) And second 5" from first.	

80. GAUZE DRESSING VASELINE

Specifications.

Qualitative Requirements	Picture of Equipment
a)Non adherent dressing U.S.P. impregnated with b)U.S.P. white Petrolatum c)Size: 10 x 10 cm d)Package: sterilized 10 pieces/pack	

81. GLASSES EYE PROTECTION

Specifications

Qualitative Requirements	Picture of Equipment
UVEX- scratch resistant lens of unbreakable Polycarbonate with Maximum UV protection and frosted brow guard to block Overhead glare Side shields, which are adjustable. Adjustable temple length in four positions Overall shape should be so as to prevent any splash of Bodily fluid entering the eye.	

103. GLOVES STERILE LATEX LARGE

Specifications

Qualitative Requirements	Picture of Equipment
1. Size: Large 2. Material: natural rubber latex, single use disposable ; powder free; Sterilized sealed packs Should meet emergency medical glove requirements of NFPA1999 standard on protective clothing for emergency medical operations, 1997 edition.	

102. GLOVES STERILE LATEX MEDIUM

Specifications

Qualitative Requirements	Picture of Equipment
Size: Medium Material: natural rubber Latex, single use disposable' powder free Sterilized sealed packs Should meet emergency medical glove requirements of NFPA1999 standard on protective clothing for emergency medical operations, 1997 edition	

104. Gloves Sterile Latex XL

Specifications

Qualitative Requirements	Picture of Equipment
Size : Extra Large Material natural rubber latex, single use disposable; powder free; Sterilized sealed packs Should meet emergency medical glove requirement of NFPA1999 standard on protective clothing for emergency medical Operations, 1997 edition.	

128. INFANTRY PACK (CPR MANNEQUIN) 5 PIECES PACK WITH LUNG BAGs

Specifications

Qualitative Requirements	Picture of Equipment
Infant mannequin set for CPR training with provision of Manoeuvring airway opening skills, air ventilation and chest compression. It should be made up of good quality of rubber and plastic. It composed of three parts **MAIN BODY:-** 1. It is made up of rubber and is without head with provision to attach head in the neck. 2. It should clearly landmark with hands and feet having grooves over upper torso to fix chest part. 3. Length from neck to toe- 48 to 55 cms 4. Length of the neck - 08 to 12 cms. **HEAD** 1. It should be made of good quality of plastic fixed with neck. 2. With a facility for extension of Head 1-1.5 cm for inserting lung bag, through mouth. 3. Mandible or lower Jaw should be movable; 4. Eye ear nose should be well land marked. **CHEST** 1. It should be made up of good quality of rubber. 2. It should be compressed by 1-1.5 cm 3. It should contain impression of navel and nipple. 4. The chest should be such that it can be adjusted over the grooves of the main body. **LUNGS BAGS** 1. Pendulum in shape, made up of polythene. 2. Length: 29-32 Cm **MOUTH:** Rectangle in shape with two flaps that can be fixed over the mouth to prevent air entry from out side. Length: 11-12 cms Width: 4-7 cms The mouth will lead in to wind pipe **WINDPIPE:** Spherical in shape when inflated. Length: 15-17 cm Circumference: 6 to 7 cm **LUNG** Spherical in shape when inflated. Radius: 3-3.5 cms **LUNG INSERTER** Made up of plastic for inserting lung bag in place.	

Length: 30-35 cms Width: 2-2.5 cm.	

94. KIT CARRYING BAG NYLON

Specifications

Qualitative Requirements	Picture of Equipment
a) Material: synthetic heavy corduroy water proof b) Dimensions: 20" x 15" x 15" c) Side pouches with individual plastic zippers; additional compartment on top d) Inside upper cover divided with multiple straps for holding instruments, bottles, medicine kits upright f) Lower compartment divided into three' one of 14 " and other 6 " subdivided into two; g) Two side carry handles as well adjustable shoulder straps; Base of bag having rubber castors/rests to avoid direct contact with ground	

118. MANNEQUIN FACE SHIELD PACKETS (100 PCS PER PACKET)

Specifications

Qualitative Requirements	Picture of Equipment
1. Rectangular Barrier device used by rescuer when giving mouth-mouth/mouth –nose ventilation in patients. 2. Size 7"x12" outer synthetic layer and 5"x7" central rectangular sieve like filter of non-absorbent white plastic; 3. The outer layer has a central hole of 1.5" diameter in the area of contact with patient mouth/nose and rescuer mouth with intervening filter layer 4. Package : Single use disposable in sterile packing.	

105. MASK OXYGEN ADULT NON- RE-BREATHER (UNIVERSAL SIZE)

Specifications

Qualitative Requirements	Picture of Equipment
Size : Extra Large Material: transparent body of mask, soft plastic material with pre-Inflated cuff providing airtight cushion seal Package: single use, sterile packs Oxygen connecting tube: 3 meter length Mash straps attached for securing to patient and metal clip over Nose mask; masks should also have exhale port on either Side; one exhale port to have one way valve to prevent flow of Oxygen to atmosphere.	

106. MASK OXYGEN CHILD NON- REBREATHER (UNIVERSAL SIZE)

Specifications

Qualitative Requirements	Picture of Equipment
Size: Paediatric Material: transparent body of mask, soft plastic material with pre-Inflated cuff providing airtight cushion seal Package: single use, sterile packs Oxygen connecting tube: 3 meter length Mask straps attached for securing to patient and metal clip over Nose mask; nose masks should also have exhale port on either Side; one exhale port to have one way valve to prevent flow of Oxygen to atmosphere	

107. MASK UNIVERSAL SIZE

Specifications

Qualitative Requirements	Picture of Equipment
Size: Adult universal size Material: Disposable, single use layer filter face mask with nose clip; N95/HEPA Respirator type Should have 2 straps one to secure above ear level and other lower level. Package: in packets of 50/100; sterile	

117. PADDED BOARD SPLINT (WOODEN)- LARGE

Specifications

Qualitative Requirements	Picture of Equipment
1. Material: Rigid splint of light weight material/wood; durable and 2. Radio lucent 3. Thickness: 1 cm 4. Length: 135 cm	

116. PADDED BOARD SPLINT (WOODEN)- MEDIUM

Specifications

Qualitative Requirements	Picture of Equipment
Material: Rigid splint of light weight material/wood; durable and Radio lucent Thickness: 1 cm Length: 90 cm Width : 7 cm Padded by equal thickness foam of superior quality and enclosed By water proof, hypoallergenic, ultra-thin synthetic layer	

115. PADDED BOARD SPLINT (WOODEN)- SHORT

Specifications

Qualitative Requirements	Picture of Equipment
1. Material: Rigid splint of light weight material/wood; durable and Radio lucent 2. Thickness: 1 cm 3. Length: 35 cm 4. Width: 7 cm 5. Padded by equal thickness foam of superior quality and enclosed 6. By water proof, hypoallergenic, ultra-thin synthetic layer	

MFR & AMBULANCE EQPT. (03 ITEMS)

88. PORTABLE ULTRASOUND MACHINE.

SPECIFICATION

SN	Technical specification	Name of Equipment
01	Should have AC Mains adaptor/battery charger	
02	It should have in built full alphanumeric keyboard	
03	Latest technology all-digital Hand Held Ultrasound System suitable for adult & paediatric ultrasound	
04	Should have broad band frequency Transducer Technology	
05	Should have B mode, M-mode, Ultrasound angio	
06	Should have a very high System Dynamic Range of at least 125 dB.	
07	Should have inbuilt rechargeable Lithium Ion Battery and the system should operate for at least 90 minutes on battery	
08	Should have integrated display screen size of at least 5 inches	
09	Should have high frame rate of more than 90 frames/sec	
10	Should have standard calculation package.	
11	Should have image storage facility for at least 100 images.	
12	Should have cinel memory. Power Doppler	
13	Should be light weight system weighing less than 4 kg for hand carrying.	
14	System should be supplied complete with the following.	
15	60mm broadband 5-2 MHz curved array for general purpose. Abdominal, obstetric.	

85. REGULAR OXYGEN LSP# 170-020 WITH LIGHT WEIGHT OXYGEN CYLINDERS

Specifications.

Qualitative Requirements	Picture of Equipment
Oxygen cylinder a) The medical Oxygen cylinder should be made of high quality * Strength of aluminium alloy with heat sensitive coating. * Capacity: 425 litres b) It should be duly approved by the Chief controller of c) Explosive (CCE) at Nagpur. d) The system should be rust proof. e) The refilling procedure should be risk free & simplex, with the help Of portable refilling station complete with pressure gauge to show filling pressure. f) All fittings should be leak proof. g) in built pressure gauge system to be provided with the cylinder. h) The medical Oxygen cylinder & all other fittings should be hygienic & free from contamination. i) Finishing should be standard seamless aluminium with clear coat of heat sensitive powder paint. **Regulator** j) Accessories: high pressure regulator, flow meter, connecting tube of 3 meter length, nasal cannula and non rebreather mask-adult and infant sizes, carry pack with back harness; k) Compatible with light weight oxygen cylinder l) Flow regulation of 0- 20 L/minute m) Outlet compatible with nasal cannula/non rebreather mask n) Control valve should be designed to provide calibrated flow of oxygen at a pressure of 16 PSIG to 70 PSIG depending on the application. o) The regulator must be made of anodized aluminium composite material. p) The pressure indicator on the valve must be protected by rubber- o – ring. q) The weight of the regulator inclusive flow meter system should not exceed 310 gms. r) The length of the regulator should not exceed 10 cm & diameter not to be more than 4 cm. s) Hypoallergenic surgical micro pore adhesive tape	

Technical Specifications along with TDs for Sam Splint

S/No.	Proposed Specification by BOO		Final Proposed	Proposed Trial Directive
1	Lightweight and portable for use in emergencies, clinical, and outdoor settings.		**Lightweight and portable for use in emergencies, clinical, and outdoor settings, while easily bending into curves for enhanced rigidity and customizable support**.	
2	Bends into curves for enhanced rigidity and customizable support		Bends into curves for enhanced rigidity and customizable support	BOO to physically check and verify.
3	Neoprene padding (3 mm) layered on aluminium core for	i. Excellent durability and long service life.	i. Durable and long service life.	BOO to check and verify through OEM certificate
		ii. Weather and chemical resistance.	ii. Weather and chemical resistance.	BOO to check and verify through OEM certificate
		iii. Thermal insulation and effective shock absorption	iii. Thermal insulation and effective shock absorption	BOO to check and verify through OEM certificate
		iv. Soft, skin-friendly surface for patient comfort.	iv. Soft, skin-friendly surface for patient comfort.	BOO to physically check and verify.
4	Aluminium thickness of 0.46 mm for strength with flexibility.		Aluminium thickness of Min **0.40 to 0.50 mm** for strength with flexibility.	BOO to physically check and verify through OEM certificate
5	Radiolucent: X-Ray safe.		Radiolucent: X-Ray safe.	BOO to check and verify through OEM certificate
6	Reusable and cleanable exterior for extended usability.		Reusable and cleanable exterior for extended usability.	BOO to physically check and verify through OEM certificate
8	Includes straps with	i. Nylon Straps	i. Straps	BOO to physically check and verify

	buckles in the box for secure fastening.	ii.	Waterproof and weather-resistant	ii.	Waterproof and weather-resistant	BOO to check and verify through OEM certification provided by the firm.
		iii.	Universal Size	iii.	Universal Size	BOO to physically check and verify.

S/No.	Proposed Specification by BOO		Final Proposed	Proposed Trial Directive
9	Comes in flat and roll-up models for convenient storage and portability.		Comes in flat and roll-up models for convenient storage and portability.	BOO to physically check and verify.
10	Bright orange color for high visibility in rescue and emergency use.		**Point may be removed. Any color is acceptable**	
11	Length markings on the exterior for quick measurement		Length markings on the exterior for quick measurement	BOO to physically check and verify.
12	Can be trimmed to size for patient-specific fit.		Can be trimmed to size for patient-specific fit.	BOO to physically check and verify.
13	Available in sizes (XL, S, M, L):	i. XL: 100 x 200 cm, 5 straps	i. **XL: 100 x 20 cm, (Min. 5 straps)**	BOO to physically check and verify.
		ii. S: 25 x 140 cm, 3 straps	ii. **S: 25 x 14 cm, (Min. 3 straps)**	
		iii. M: 50 x 140 cm, 4 straps	iii. **M: 50 x 14 cm, (Min. 4 straps)**	
		iv. L: 100 x 140 cm, 5 straps	iv. **L: 100 x 14 cm, (Min. 5 straps)**	

ANNEXURE-XXX - A

TECHNICAL SPECIFICATION OF TOXIC CHEMICAL NETRALISER

General:

Handy spray device containing pressurized reactive decontaminant chemical powder.

It should be able to neutralize a wide range of chemical hazards (Vapour and liquid chemicals- H2S, Acids, Phosphorus, Sulphur, Phenols, Nitrogen Compounds, Halogens/ Halides, Acidic and Caustic Gases.

Real time, onsite neutralization Chemical threats.

Effective against vapors, fumes and liquids.

Safe, non toxic, non corrosive

Can be used in open areas for self safety in case sudden release of chemicals .

Application Areas:

To neutralize H2S threat in refineries, in handling areas, tail gas unit, amine regeneration units and areas wherever H 2S presence is expected in refineries.

The chemical warfare agents if used in government building or metros or any other places.

Chlorine and ammonium leak threads are neutralized.

All known and unknown toxic vapors gases and chemical threats expected in solid state.



4 Kg

2 Kg

1 Kg



Shaker Bottle

Container



Mitt

Technical Specifications:

Sl.	Particulars	4 kg pressurized Cylinder
1.	Powder Capacity	4 KG
2.	Container Material and its capacity	Composite Body - HDPE with Aramid Fibre Winding
3.	Main Chemical composition	Nano active metal oxide (MgO and TiO2)
4.	Color and form of material/ particles	White dry powder
5.	Operating Pressure of the container	180 - 220 PSI (up to 15 bar)
6.	Discharge time	Not more than 2 min
7.	Pressure gauge (easy to read)	Yes
8.	Propellant used for pressurization	Dry Nitrogen/ Any suitable gas
9.	Discharge Nozzle	Nozzle that can spray the powder evenly and easily
10.	Hose	EPDM / Flexi PVC hose
11.	Gross Weight (including powder)	Approx (6.7Kg +/- 10%)
12.	Dimensions (height x diameter (including vessel Base ring))	585 x 185 mm approx.
13.	Test Reports of Powder	TNO, Netherlands/Beattle/SBCCOM or Lloyds for H2S neutralization
14.	Life of Decontamination Powder	5 Years from the date of filling the vessel.
15.	Environmental impact/effect	MSDS to be provided and no residual risk.

ANNEX- XXX(B)

TECHNICAL SPECIFICATION FORCED ENTRY TOOL KIT (HYDRAULIC SPREADER/CUTTER TYPE)

1. Scope :

The Forced Entry Tool Kit shall consist of a compact, hand-operated hydraulic combi tool designed for forcible entry, rescue operations, and emergency response. The tool shall be suitable for breaching doors, cutting metal components, and spreading structures in confined environments.

2. Functional Requirements :

2.1 The tool shall be capable of performing:
- Spreading
- Cutting
- Prying / Forcible entry
- Crushing / Squeezing

2.2 The tool shall be suitable for:
- Breaking doors, locks, and grills
- Cutting metal bars and rods
- Emergency rescue in collapsed structures and vehicles

2.3 The tool shall be hand-operated (manual hydraulic type) and shall not require external power sources.

3. Construction & Design :

3.1 The tool shall be:
- Compact and portable
- Rugged construction for field use
- Corrosion-resistant

3.2 The blades/jaws shall be:
- Made of high-strength alloy steel
- Hardened and replaceable

3.3 The tool shall have:
- Ergonomic hand grip
- Non-slip handle for safe operation

4. Performance Specifications :

Sl. No.	Parameter	Requirement
1	Maximum Working Pressure	10,443 psi
2	Maximum Spreading Force	7,419 lbf
3	Spreading Distance	5 inches
4	Maximum Cutting Opening	1.1 inches
5	Theoretical Cutting Force	31,248 lbf
6	Minimum Spreading Force (at 25 mm from tip)	5,845 lbf

Sl. No.	Parameter	Requirement
7	Operator Type	Hand Operated
8	Weight (Ready for Use)	17 lbs
9	Dimensions (L × W × H)	27.3 × 9.1 × 2.4 inches
10	Cutting Capacity (Round Bar – S235)	0.7 inches

5. Material Standards :

5.1 The cutting performance shall be based on steel conforming to:
- EN 10025 (S235 grade steel)

6. Accessories (Minimum Supply) :

The Forced Entry Tool Kit shall be supplied with the following:

Sl. No.	Description	Quantity
1	Hydraulic Hand Tool (Spreader/Cutter)	1 No
2	Carrying Case (Heavy Duty)	1 No
3	Basic Tool Kit for Maintenance	1 Set
4	User Manual & Safety Instructions	1 Set

7. Additional Requirements:

7.1 The equipment shall be:
- New and unused
- Of latest design and manufacture

7.2 The tool shall be suitable for quick deployment in emergency situations.
7.3 The bidder shall provide:
- Technical literature
- Performance certificates (if available)

7.4 The tool shall be maintenance-friendly and suitable for field conditions.

8. Warranty:

The equipment shall be supplied with a minimum 12 months warranty from the date of supply against manufacturing defects.

ANNEX-XXX(C)

SPECIFICATION FOR REMOTE OPERATED LIFE BUOY - 17 NO.S

PART – I:

1. The Unmanned Remote Operated Life Buoy is a remotely operated rescue device for rapid response in drowning and water-related emergencies. It enables swift access to victims in distress while significantly reducing the risk to rescue personnel. The system is intended to improve the efficiency, safety, and effectiveness of water rescue operations in challenging environments.
2. The Remote Operated Life Buoy is suitable for deployment across a wide range of scenarios, including coastal areas, inland water bodies such as rivers and lakes, and disaster situations like floods. It is also well-suited for search and rescue missions where quick response time and remote accessibility are critical to saving lives.
3. The system is lightweight, portable, and robust in construction, allowing for easy handling and transportation. It is designed to operate effectively under harsh environmental conditions, including strong currents and adverse weather, and is equipped with high-speed propulsion and reliable remote-control capabilities.
4. The Remote Operated Life Buoy includes the features of automatic activation upon contact with water, self-recovery in case of capsizing, and autonomous navigation functions.

PART – II: TECHNICAL SPECIFICATIONS :

1. General Specifications
   a) Weight: not more than 20 kg
   b) Dimensions: 120 x 80 x 25 cm
   c) Maximum Speed: 18 km/h (9.7 knots)
   d) Loaded Speed: 7.5 km/h
   e) Motor Type: Brushless DC
   f) Load Capacity: 200 kg
   g) Operating Time: 60 minutes
   h) Operating Temperature: -20°C to +50°C
   i) Storage Temperature: -20°C to +50°C
   j) RC Frequency: 2.4 GHz

2. Structural Features
   a) Composite lightweight body
   b) Durable fiberglass hull
   c) Integrated handles (4 Nos.)
   d) Shock-absorbing barrier

3. Power System
   a) Battery Type: Li-Ion
   b) Battery Capacity: 600 Wh
   c) Battery Weight: 2.8 kg
   d) Charging Time: 4 hours
   e) Protection: Over-temperature and low-voltage protection

4. Charger Specifications
   a) Charge Voltage: 25.2 V (max)
   b) Charge Current: 3 A (max)
   c) Operating Temperature: -30°C to +45°C
   d) Storage Temperature: -40°C to +75°C

5. Remote Controller Specifications
   a) Weight: 342 g
   b) Dimensions: 213 x 117 x 115.5 mm
   c) Operating Range: 800 m
   d) Frequency: 2.4 GHz
   e) Battery: 6 x AA
   f) Operating Temperature: -20°C to +50°C
   g) Telemetry: Battery voltage and signal quality

6. Safety Features
   a) Over-current protection
   b) Over-temperature protection
   c) Low voltage warning
   d) Water ingress protection
   e) Auto-capsize recovery

7. Navigation & Control

   a) One-handed operation
   b) Navigation joystick control
   c) Go Home function (optional)
   d) Hold Position

8. Camera System
   a) Resolution: 1080p at 60 fps
   b) IP Rating: IP68
   c) Field of View: 90°
   d) Lens: 3.6 mm
   e) Data Range: >800 m
   f) Frequency: 5.8 GHz

9. Monitor Specifications
   a) Display Size: 5 inches
   b) Resolution: 800 x 480 px
   c) Battery Capacity: 4000 mAh
   d) Working Time: >3 hours
   e) Storage: TF card up to 64 GB
   f) Frequency: 5.8 GHz

10. Additional Features
   a) Navigation sidelights (red & green)
   b) Action camera holder
   c) Audible low voltage warning
   d) Wireless charging

11. Accessories
   a) Carrying case
   b) Protective cover
   c) Stand
   d) Wheeled transport system

12. Optional Hardware Features
    a) Manual drive
    b) Voice transmission
    c) Video streaming
    d) Lighting system
    e) Autopilot.

ANNEX-XXX(D)

TECHNICAL SPECIFICATIONS FOR THE BATTERY-OPERATED COMBI-TOOL:

1. The combi tool shall be capable of cutting of various sections such as solid round bar, hollow round bar, flat section, square tube, rectangular tube etc. It would also cut the door pillars of new generation cars and also be able to perform the spreading and pulling functions.

2. The blades shall be made of shock-resistant, non-corroding alloy steel, and shall be hardened and ground. They shall be interchangeable and regrindable.

3. The tool carrying handle shall have integrated LED lights powered from the main battery. The LED lights can be turned on or off by means of a switch.

4. The combi tool shall have following specifications:

Spreading Distance	Not less than 375 mm
Spreading force measured at 25 mm from the tips as per EN 13204	Not less than 4 T
Max. Spreading force	Not less than 175 T
Cutting force	Not less than 65 T
Squeezing force	Not less than 8.5 T
Pulling distance	Not less than 250 mm
Pulling force	Not less than 10 ton
Weight including battery	Not more than 21 kgs
Capable of cutting round steel bar	Not less than 35 mm
The material of the steel profiles shall conform to -	EN 10025-1-2000 table 5, type S 235
Mandatory Compliance category of cutting performance as per NFPA 1936 -	A7,B8,C8,D8,E8
Mandatory Compliance category of cutting performance as per EN 13204 -	1J,2J,3K,4K,5K

5. ACCESSORIES :

Pulling Chains Set 10 mm – 1.5m + 3.0m	1 set
Pulling Attachment Set	1 set
Mains Power connector to connect the tool to any 220 V source	1 no
Battery charger – 300 watts – with indication for the state of health of battery	1 no
On Tool Charging Cord	1 no
Tool diagnostic cord having Cable not less than 3.5 mtrs to connect the tool to a PC or laptop for battery and tool diagnostics through diagnostics software	1 no
Battery status diagnostic tool to check battery health	1 No
Spare Battery	1 No

ANNEX-XXXI		
OUTBOARD MOTOR		
Technical Specifications		
1	Out Board Motor	An outboard motor is a propulsion system for rescue boats, consisting of a self-contained unit that includes engine, gearbox and propeller or jet drive, designed to be affixed to the outside of the transom with accessories.
2	Specification	SOLAS 74 as amended, Regulation III/ 4 & X/3 and LSA Code
3	Fuel Type	Petrol
4	Type of Engine	Two Stroke
5	Maximum Power output	30 horsepower
6	Engine Shaft Type	Short
7	TRANSOM HEIGHT	15 inch
8	Engine Make	Mercury, Yamaha, Suzuki(OEM authorization letter is required)
9	Engine model number	ME 30HP 2STROKE
10	Dry Weight	Not More than 55 Kg's
11	Engine Type	SOHC
12	Starting System	Manual-Recoil
13	Cooling System	Water Cooled
14	Fuel Delivery System	Carburator
15	Numbers of Cylinder	3
16	Piston Displacement (in cm^3)	490-510
17	Bore × Stroke (in mm)	1.92:1
18	Full Throttle Operating Range (rpm)	5500
19	Fuel Tank Capacity	Not less than 25 liter
20	Battery Charging	YES
21	Alternator Rating	NA
22	Battery Type	Marine Grade Sealed Maintance Free
23	Battery Capacity (in AH) (Write NA for not appicable)	NA
24	Steering	Tiller Handle
25	Remote Type	Single

26	Trim method position	Manual
27	Gear Shift	FNR
28	Gear Ratio	1.92:1
29	Drive Protection	Rubber Hub
30	Propeller Dimensions	11
31	Propeller material	Aluminium Alloy
32	No of blades in Propellers	3
33	Over-Rev Limiter Mechanism	Yes
34	Emergency Stop Switch (lanyard)	YES
35	Start-in Gear Protection	YES
36	Loop Charge Fuel Induction	YES
37	Dual Water Intakes	YES
38	Through Prop Hub Exhaust	YES
39	Water Pump Housing	YES
40	Fuel Tank	1
41	Fuel Attachment	1 Set
42	On-board spares (OBS)	1 Engine oil filter - 03 nos. 2 Fuel Filter - 06 nos. 3 Air Filter - 02 nos. 4 Fuel line with priming valve and connectors – 01 no. 5 Propeller - 01 No. 6 Spark plug - 03 nos. 7 Spark plug wrench -01 no. 8 Water pump repair kit – 01 set 9 Water pump impeller – 01 no. 10 Gear oil drawn screw washer – 06 nos. 11 Lubrication oil drain plug washer – 02 nos. 12 Fuses of all system complete - 02 set
43	CD Ignition System	YES
44	Thermo State Controlled Coolling System	YES
45	Shallow Water Drive	YES
46	Audible Over Head Monitor	YES
47	Analog Techometer	YES
48	Digital Tachometer	YES
49	CERTIFICATION	
50	Availability of Type Approval to prove conformity of declared parameters from IRS / DG Shiping	YES
51	Certificate Date	01.01.2021
52	Certificate number	MEDB000034G

53	Compliance to latest applicable emission Norms of Govt of India	YES
54	After Sales and Service	OEM should have adequate facilities in India for providing after sales service / Technical Support and spares including electronic equipments for minimum period of 10 years (after delivery of last equipment) including electronic equipments
55	Test and Trial by the user	Yes
56	Warranty	2 years
57	Free Service Period	2 years

General Information

1. Bidders are requested to offer the Procurement of certain Personnel protective equipments as per the specifications attached.

2. For each item, the bidder should include all the cost associated with fixtures, reinforcements, accessories and ancillary items necessary for the satisfactory operation of PROCUREMENT OF CERTAIN PERSONNEL PROTECTIVE EQUIPMENTS.

3. Spare parts list, listing spare likely to be required for (7) years operations shall be attached with the Bid.

4. (i) Bidders are requested to provide, with their tender offer, the following information for all the items
    - Name of the Manufacturer
    - Brand Name & Model Number
    - Country of Origin

    (ii) Catalogue, Pamphlet, descriptive literature, spare parts list and technical specifications for each unit of item must be forwarded with the offer.

5. Deleted

6. All items should be of high quality, durable, and suitable for use in an **Procurement of certain Personnel protective equipment**. The technical specification and standards of each item delivered shall be that currently in use at the time of delivery.

7 The Bidder, must have necessary quality certifications as applicable to Procurement of certain Personnel protective equipments.

8. If the bidder fails to demonstrate any of the products quoted, the bid for that product would be considered as withdrawn and suitable action will be taken as per the Clause 15 of ITB. i.e. forfeiture of the Bid security and also the bidder may be debarred for a certain period as decided by the Managing Director.

SECTION – VI

PRE - QUALIFICATION CRITERIA

(Referred to in clause 13.3 of ITB)

I. Terms of Qualification for Procurement of certain Personnel protective equipments:

The Bidder should have supplied Procurement of certain Personnel protective equipments or similar items as specified in Additional Terms and conditions in the specification. The Supplied units should be in working condition without any adverse remarks as on the date of bid notification.

- The bidder should furnish the information on past supplies and satisfactory performance in the proforma given under Section XI- Format B1, duly attested by the Bid signatory.
- Bidders shall invariably furnish documentary evidence (End-user Certificate) in support of the satisfactory operation of the Procurement of certain Personnel protective equipment as specified or a CA/Statutory auditor Certificate to that extent as per the format provided in the Section XI- Format B2

The Bidder shall have an average annual turnover in the last three financial years of not less than the amount specified in the Schedule of the Requirements and also to have a positive net worth as per the latest Annual Accounts. In case the Bidder wishes to bid for more than one item, then the Bidder should have the Average Annual Turnover in the last three financial years of more than the cumulative total of the amounts specified against these items.

- Towards the above, the bidder should furnish data as per the Format (B3) given in Section- XI, to support that he has the financial capacity to perform the contract. Further the bidder as to submit the corresponding Balance Sheets and Profit and Loss Accounts for verification

- The Bidder, must have necessary quality certifications as applicable.

II. Terms of Disqualification:

1. The Bidders who has withdrawn their bids in any of the previous tenders of APMSIDC

2. A bidder who is placed on the black-list by either APMSIDC or by any other State / Central government's department or organization in the last 3 years. The bidder should not be currently blacklisted from the above-mentioned organizations.

3. The bidder who has been declared as ‘undependable supplier’ for two (2) instances in the last one year by the APMSIDC

4. The bidders against whom there have been reports of substandard Procurement of certain Personnel protective equipment and/ or service are liable for disqualification

5. The following shall be reason for rejection for Procurement of certain Personnel protective equipment:

   <u>(General appearance of the vehicle shall not show any evidence of poor workmanship)</u>

   a. Rough, sharp or unfinished edges, burrs, seam, sharp corners, joints, cracks, and dents.
   b. Non-uniform panels. Edges that are not filleted, beveled, etc.
   c. Paint runs sags, orange peel, “fish eyes”, etc. and any other Imperfection or lack of complete coverage.
   d. Body panels that are uneven, unsealed, or have voids.
   e. Misalignment of body fasteners, glass, viewing panels, light housings, other items with large or uneven gaps, spacing etc. such as door, body panels, and hinged panels.
   f. Improper body design or interface with the chassis that could cause injury during normal use or maintenance.
   g. Improperly fabricated and routed wiring or harnesses.
   h. Improperly supported or secured hoses, wires, wiring harnesses, mechanical controls.
   i. Loose, vibrating, abrading body parts, components, subassemblies, hoses, wiring harnesses or trim.
   j. Interference with chassis components, body parts, doors, etc.
   k. Leaks of any gas or fluid lines, (AC, coolant, oil, oxygen, etc.)
   l. Abnormal Noise, panel vibrations, etc.
   m. Sagging, non-form fitting upholstery or padding.
   n. Incomplete or incorrect application of rust proofing.
   o. Inappropriate or incorrect use of hardware, fasteners, components, or methods of construction.

   p. Incomplete or improper welding, riveting.

   q. Visual deformities.

   r. Lack of uniformity and symmetry where applicable.

   s. Unsealed appurtenances or other body components, gaskets, etc.

   t. In addition, any deviation from specification requirements or any other item, whether or not stipulated herein, that affects form, fit, function, durability, reliability, safety, performance or appearance shall be cause for rejection.

   u. Defective components shall not be furnished. Parts, equipment, and assemblies, which have been repaired or modified to overcome deficiencies, shall not be furnished without the approval of the Government. Welded, bolted, and riveted construction utilized shall

be in accordance with the highest standards of industry. Component parts and units shall be manufactured to definite standard dimensions with proper fits, clearances, and uniformity. (All the old parts if any like partition, stretcher, etc. to be handed over to Govt office to the representative.

Note: In all the above cases, the disqualification cut-off date will be till the contract is signed

III. Notwithstanding anything stated above, the purchaser reserves the right to assess the Bidders capabilities and capacity to perform the contract should circumstances warrant such an assessment in the overall interest of the purchaser deciding on award.

SECTION – VII (A): BID FORM

(Name and Address of Purchaser)

Date_____

To

Contract No._____

The Managing Director,
APMSIDC, Mangalagiri.

Having examined the Bidding Documents including Addenda No. _____ the receipt of which is hereby duly acknowledged, we, the under-signed, offer to supply and deliver _____ (Description of Goods and Services) in conformity with the said Bidding Documents for the sum as given in the Price Bid (electronically) or such other sums as may be ascertained in accordance with the schedule of prices furnished and made part of this bid.

We undertake, if our bid is accepted, to commence delivery as per the delivery schedule mentioned in this RFP and to complete delivery of all the items and perform incidental services as specified in the contract.

If our bid is accepted we will obtain the guarantee of a bank in a sum not exceeding 5% of the Contract price for the due performance of the Contract.

We agree to abide by this bid for a period **of 90 (Number) days** from the date fixed for bid opening under Clause 22 of the Instruction to Bidders and shall remain binding upon us and may be accepted at any time before the expiration of that period.

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in India like “The Prevention of Corruption Act 1988”

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.

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

Dated this _____ day of _____

Signature: _____

(in the Capacity of): _____

Duly Authorized to sign bid for and on behalf of

_____

Section VII (B)- Model Price Schedules (available on e-procurement Platform)

S. No	Unit Price (Rs.)

Note:

1. The price quoted shall be inclusive of all duties and sales and all taxes including transportation, installation, commissioning at site and all incidental charges associated with the contract.

SECTION – VIII : BID SECURITY FORM

To

The Managing Director
APMSIDC, Mangalagiri.

Whereas _____
(hereinafter called "the Bidder" has submitted its bid dated _____ for the supply of _____ (hereinafter called "the Bid")

KNOW ALL MEN by these presents that WE _____ of _____ having our registered office at _____ (hereinafter called the Bank") are bound unto _____ (hereinafter called "the purchaser") in the sum of _____ for which payment will and truly to be made to the said purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the common Seal of the said Bank this _____ day of _____.

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 Purchaser during the period of bid validity:

    - Fails or refuses to execute the contract form if required;

    - Fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders

    - Does not accept the correction of the bid price pursuant to Clause 15.7(c).

We undertake to pay the purchaser up to the above amount upon receipt of its first written demand, without the purchaser having to substantiate its demand, provided that in its demand the purchaser will note that the amount claimed by it is due to 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 45 days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date i.e., upto _____.

…… (Signature of the Bank)

SECTION – IX: CONTRACT FORM

THIS AGREEMENT made the _____ day of _____ between _____ (Name of Purchaser) of _____ (Country of Purchaser) (hereinafter "the Purchaser") of one part and _____(Name of the Supplier) of _____ (City and Country of Supplier) (hereinafter "the Supplier") of the other part.

WHEREAS the Purchaser is desirous that certain Goods and ancillary services should be provided by the supplier, viz, _____ (Brief description of Goods and Services) and has accepted a bid by the supply of Goods and services in the sum of _____ (Contract price in Words and Figures) (hereinafter "the Contract Price").

Now this Agreement witnessed as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the conditions of Contract referred to;

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

   (a) The Technical and Price bid of the Supplier
   (b) The approved Technical Specifications,
   (c) The General Conditions of Contract,
   (d) The Special Conditions of Contract, and
   (e) The Purchaser's Notification of Award.

3. In consideration of the payments to be made by the purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provision of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

5. Brief particulars of goods and services which shall be supplied/provided by the Supplier are as under.

SL NO.	BRIEF DESCRIPTION TO GOODS & SERVICES	QUANTITY TO BE SUPPLIED	UNIT PRICE	DELIVERY TERMS

TOTAL VALUE:

DELIVERY SCHEDULE:

IN witness whereof the parties here to have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.
Signed, Sealed and Delivered by the

Said _____ (For the Purchaser)

in the presence of _____

Signed, sealed and Delivered by the

Said _____ (For the supplier)

In the presence of _____

SECTION- X: PERFORMANCE SECURITY FORM

To

The Managing Director
APMSIDC,
Mangalagiri
Guntur.

WHEREAS _____ (Name of the Supplier) hereinafter called "the Supplier" has undertaken, in pursuance of Contract No. _____ dated _____ 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 recognized 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 under take 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 limit 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 _____.

Signature and seal of Guarantors

_____

_____

Date _____

Address_____

_____

SECTION XI

FORMAT B1 : PROFORMA FOR PERFORMANCE FOR EQUIPMENT (for a period of last three years)

(Please see Section VI: Qualification Criteria)

PERFORMANCE STATEMENT FOR LAST THREE YEARS

Name of Firm/Dealer/Supplier: _____

Sl. No.	Name of Organization/ Department to whom supplied	Purchase Order No. & Date	Type of Vehicle Supplied (Water Tender's A&B type/Water Bouser/MPT/Foam Tender/mini water Tender with water Mist Technology)	Qty. Supplied	Satisfaction report/ performance reports on supplied vehicles	Remarks
1	2	3	4	5	6	7
1						
2						
3						
4						
5						
6						

Note:- Part-D shall invariably submit by the bidder in the above format.

Signature of the Bidder

_____

_____

_____

SECTION XI

FORMAT B2

CA (STATUTORY AUDITOR) CERTIFICATE

(Please see Section VI: Qualification Criteria)

Certificate from the Statutory Auditor

This is to certify that ..... (name of the Bidder) Procurement of certain Personnel protective equipment offered under the Bid. The Bidder had supplied the quantities shown in the past performance statement and also completed the respective supplies within the stipulated delivery period/s.

Further it is certified that the previously supplied <Insert appropriate vehicle type> are reported to be in working condition without any adverse remarks from the respective users and some are working for more than two year as per the records as on the date of this Tender notification.

The bidder has previous experience in supply of Equipment for _____ years and has qualified service staff working with him".

Name of Authorized Signatory:
Designation:
Name of firm:
(Signature of the Authorized Signatory)
Seal of the Firm

B3. FINANCIAL CAPACITY OF THE BIDDER

A. Details of Annual Turnover for Preceding 3 Years.

	Year 1 (2022-23)	Year 2 (2023-24)	Year 3 (2024-25)	Average Annual Turnover
Turn Over (In Rs. Crores)				

B. Details of Net Worth

	Year1 (Last Financial Year i.e. as on 31st March 2025)
Paid up Capital (Rs. Cr)	
(Add) Free Reserves (Rs. Cr)	
Total Net Worth (Rs. Cr)	

_____

(Signature of Bid Signatory)
Seal of the Firm

Certificate from the Statutory Auditor

This is to certify that .....(name of the Bidder) has an average annual turnover (in the last three financial years) and Net Worth (in the last financial year) as shown above

Name of Authorized Signatory:
Designation:
Name of firm:
(Signature of the Authorized Signatory)
Seal of the Firm

Note: Bidder shall submit audited balance sheets for last three financial years

SECTION - XII

Declaration Form

I / We …….. having Our …….. office at ……. read and understood the terms and conditions contained in the bidding documents under this notification for bid and offer our bids unconditional, to the extent not stated at any other part of our bid.

We will not quote or supply the similar to the ones offered under this bid notification to any agency or organization in the country, at the rate lower than the rate quoted in this present tender.

If we found quoting lower rate than the rate quoted to the APMSIDC, to any other agency in the country during the validity of the present contract, we will remit the differential cost to the APMSIDC, unconditionally.

Signature :

Date :

Name of the
Firm and address :

SECTION XIII

Check List of Documents to be Uploaded as part of the Bid and Notes to Bidders

I. Documents with the Technical Bid

CHECKLIST FOR TECHNICAL BID
Name of Firm/Dealer/Supplier: _

S. No.	Details	Remarks of the Bidder
1	Processing fee (Rs.11,800/-)	Online
2	EMD (Online/Offline)	Online/Offline
3	Company/Firm Registration Certificate.	Online/Offline
4	Minimum Average Annual Financial Turnover for the last 3 years.	Online/Offline
5	GST Certificate	Online/Offline
6	SSI Certificate, (if applicable)	Online/Offline
7	NSIC Certificate, (if applicable)	Online/Offline
8	Certificates/Orders regarding Previous Purchase orders.	Online/Offline
9	Supply Orders regarding similar chassis supplied elsewhere other State Fire Services.	Online/Offline
10	Certificate from ARAI/VRDE/ICAT, if applicable.	Online/Offline
11	Other relevant documents if any.	Online/Offline

Signature of bidder

II. Financial (Price) Bid in the format available with the e-procurement platform

- Please note that the Bidder runs the risk of his bid being rejected if the price schedule contains any conditions.

Notes to Bidders

1. Upload the documents in ZIP format with suitable description as defined above.
2. The scanned documents shall be legible failing which they will not be considered.
3. Sign on all statements, documents, certificates uploaded owning responsibility for their correctness / authenticity.
4. All the statements copies of the certificates, documents etc., enclosed to the Technical bid shall be given page numbers on the right corner of each certificate
5. The format of B.G. towards E.M.D. should be adhered to as per prescribed format. Any deviation will result in making the bid non-responsive.
6. The tenderer is subjected to be black listed and the EMD forfeited if he is found to have misled or furnished false information in the forms / statements / certificates submitted in proof of qualification requirements or record of performance (Please see Corrupt and Fraudulent Practices Clause)
7. All the Bidders are requested to quote with single option only, for the each item offered and please note that bids with multiple options, for any one or all of the items offered, will be rejected by the purchaser as Non-responsive.

Annexure -I

ANDHRA PRADESH MEDICAL SERVICES & INFRASTRUCTURE DEVELOPMENT CORPORATION (APMSIDC)

WARRANTY CERTIFICATE

(to be filled jointly by the Tenderer, Purchaser for every item)

Date:

APMSIDC Supply order No : .....dated.....

The **Procurement of certain Personnel protective equipments**

*(***Procurement of certain Personnel protective equipments***)*

Model No..... bearing serial no ..... was commissioned successfully at ..... is offered with a comprehensive warranty for a period of ..... Years starting from ..... to ..... including all the following accessories;

Sl. No	Name of the accessory	Manufacturer's name	**Procurement of certain Personnel protective equipment** Serial No.	Qty

Name of the Supplier: Signature: Seal:	Name of the Purchaser / End User: Signature: Seal:

Annexure - II

ANDHRA PRADESH MEDICAL SERVICES & INFRASTRUCTURE DEVELOPMENT CORPORATION (APMSIDC)

GENERAL INFORMATION ABOUT THE TENDERER

Name of the Tenderer

Registered address of the firm:

State: District

Telephone No. Fax.No.

Email.

Address			
State		District	
Telephone No.		Fax	
Email		Website	

Type of Firm (Please ✓relevant box)

Private Ltd.		Public Ltd.		Proprietorship	
Partnership				Others, specify	
Registration No. & Date of Registration.					
Nature of Business (Please ✓ relevant box)					
Equipment		others (Please specify)			

Annexure - II

On Purchaser letter Head

Dt:_____

ANDHRA PRADESH MEDICAL SERVICES & INFRASTRUCTURE DEVELOPMENT CORPORATION (APMSIDC)

THREE MONTHS PERFORMANCE CERTIFICATE

(to be fiiled by the head of user institution individually for every item)

Vehicle No.			
SUP.CODE / Name of the Supplier			
Item Details			
Name of the item:		Purchase Order No:	
Make / Manufacturer		Purchase Order Date:	
Model		Purchase Amount	
Serial no.		Project Name	
Date of Commissioning		Location / Department	
Whether **Procurement of certain Personnel protective equipment** working satisfactorily without any problem for one months?		YES □ NO □	
If No, provide details of **Procurement of certain Personnel protective equipment** failure in the first month *(attach additional details if any in a separate sheet)*			

BREAK DOWN DETAILS

Break down Reported Date	Attended date	Rectified date	Attended by	Details of beak down / service

Present status of the item	satisfied □ Not satisfied □
Recommended to settle the final 10% of payment	YES □ NO □
Recommend for trial run for one more month	YES □ NO □
Performance of accessories supplied	
Further Training	Required □ Not required □
Remarks of Purchaser	

Three months performance certificate was issued on
(date to be filed in by the Purchaser or his authorized representative)

Name of Purchaser		Sign.	
Signature of the Superintendent.		Sign. & Seal	

Date: Seal of supplier:	Date: Purchaser Seal :