

Tender Notice No. 2 /GSDMA/Fire Fighting and Search & Rescue Equipments/2020



GUJARAT STATE DISASTER MANAGEMENT AUTHORITY

Tender Documents for Supply of Fire Fighting and Search & Rescue Equipments

GUJARAT STATE DISASTER MANAGEMENT AUTHORITY

Block No. 11, 5th Floor, Udyog Bhavan, Gandhinagar, Gujarat

Tel: +91-79-23259246 / Fax: +91-79- 23259275

Email: info@gsdma.org

sksgsdma@gmail.com

ast-dir-gsdma@gov.in



Disclaimer

The information contained in this tender document or subsequently provided to Bidders, whether verbally or in documentary or any other form by or on behalf of GSDMA (as defined in below) or any of its employees or advisers, is provided to Bidders on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This document is not an agreement and is neither an offer nor invitation by GSDMA to the prospective Bidders or any other person. The purpose of this document is to provide interested parties with information that may be useful to them in the formulation of their Bids pursuant to this document. This document includes statements, which reflect various assumptions and assessments arrived at by GSDMA in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This document may not be appropriate for all persons, and it is not possible for GSDMA, its employees or advisers to consider the objectives, technical expertise and particular needs of each party who reads or uses this document. The assumptions, assessments, statements and information contained in this document, may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments and information contained in this document and obtain independent advice from appropriate sources.

Information provided in this document to the Bidders is on a wide range of matters, some of which depends on the issue of interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. GSDMA accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on the law expressed herein.

GSDMA, its employees and advisers make no representation or warranty and shall have no liability to any person including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this document or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the document and any assessment, assumption, statement or information contained therein or deemed to form part of this document or arising in any way in this Bidding Process.

GSDMA also accepts no liability of any nature whether resulting from negligence or otherwise however caused arising from reliance of any Bidder upon the statements contained in this document.

GSDMA may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumption contained in this document.

The issue of this document does not imply that GSDMA is bound to select a Bidder or to appoint the Selected Bidder, as the case may be, for the Project and GSDMA reserves the right to reject all or any of the Bids without assigning any reasons whatsoever.

The Bidder shall bear all costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by GSDMA or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and GSDMA shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation for submission of the Bid, regardless of the conduct or outcome of the Bidding Process.

SIGNATURE & STAMP OF BIDDER

**TENDER NOTICE**

Tender Notice No. 2/GSDMA/Fire Fighting and Search & Rescue Equipments/2020

Tender Brief:

Online Tenders (E-tendering) for supply of Fire Fighting and Search & Rescue Equipments is publicly invited by the Gujarat State Disaster Management Authority, Block No. 11, 5th Floor, Udyog Bhavan, Gandhinagar, Gujarat, from the eligible suppliers.

Tender Details

<u>GUJARAT STATE DISASTER MANAGEMENT AUTHORITY</u>		
Block No. 11, 5th Floor, Udyog Bhavan, Gandhinagar, Gujarat Tel: +91-79-23259246 / Fax: +91-79- 23259275 www.gsdma.org		
Tender Notice No. 2/GSDMA/Fire Fighting and Search & Rescue Equipments/2020		
On-Line Tenders (e-tendering) are invited from suppliers for supplying the following goods to Gujarat State Disaster Management Authority (GSDMA)		
Description of Goods (Schedule wise)	EMD (Rs.)	1 Tender Fee (Rs.) 2 Delivery Period (Days)
1- Mist Fire Tender (Multi Purpose) with Robot Qty. 2	Rs. 24,00,000/-	1. Rs. 15,000/- 2. 120 working days after receiving Security Deposit by supplier
2- Command Vehicle Qty. 1	Rs. 75,000/-	1. Rs. 2,500/- 2. 120 working days after receiving Security Deposit by supplier
3- Pick Up Jeep/Van Qty. 1	Rs. 24,000/-	1. Rs. 1,500/- 2. 120 working days after receiving Security Deposit by supplier
4- Hydraulic Fire Fighting Arm with five articulating section 55 meters Qty. 1	Rs. 36,00,000/-	1. Rs. 15,000/- 2. 120 working days after receiving Security Deposit by supplier
5- Emergency Rescue Vehicle/Tender Qty. 1	Rs. 12,00,000/-	1. Rs. 15,000/- 2. 120 working days after receiving Security Deposit by supplier
6- Water Bowser 20 KL: Qty. 1	Rs. 6,00,000/-	1. Rs. 15,000/- 2. 120 working days after receiving Security Deposit by supplier
7- Hydraulic Platform HLA (80 meters): Qty. 1	Rs. 60,00,000/-	1. Rs. 15,000/- 2. 120 working days after receiving Security Deposit by supplier



8- Self Contained Breathing Apparatus (SCBA) training Gallery with cleaning, testing & refilling facilities Qty. 1	Rs. 6,00,000/-	1 Rs. 15,000/- 2 120 working days after receiving Security Deposit by supplier
9- Foam Nurser Qty. 1	Rs. 3,00,000/-	1 Rs. 15,000/- 2 120 working days after receiving Security Deposit by supplier
10- HAZMAT (Chemical) Tender Qty. 1	Rs. 9,00,000/-	1 Rs. 15,000/- 2 120 working days after receiving Security Deposit by supplier
11- Personal Protection Equipments (PPE) Qty. 15 set	Rs. 27,000/-	1 Rs. 1,500/- 2 120 working days after receiving Security Deposit by supplier
Schedule for Tendering		
1.	Date of Uploading tender on n procure website	13/03/2020 at 17:00 hrs.
2.	Pre-Bid Meeting	23/03/2020 at 15:00 hrs in the office of Gujarat State Disaster Management Authority, Block No. 11, 5th Floor, Udyog Bhavan, Gandhinagar, Gujarat.
2.	Last date of Downloading of Tender Documents	15/04/2020 up to 14:00 hrs.
3.	Last date of submission of online tender on n-procure (Technical as well as Price bid offer)	15/04/2020 up to 15:00 hrs.
4.	Hard Copy submission of all relevant documents [Original Tender Fee, EMD and hard copies of Technical Bid with all the relevant documents as per the requirement of the Tender (excluding Price Bid)]	On or before 15/04/2020 up to 14:00 hrs. in the office of Gujarat State Disaster Management Authority, Block No. 11, 5th Floor, Udyog Bhavan, Gandhinagar, Gujarat, Tel: +91-79-23259246
5.	Verification of Tender Fee and EMD	15/04/2020 at 15:30 hrs. in the office of Gujarat State Disaster Management Authority, Block No. 11, 5 th Floor, Udyog Bhavan, Gandhinagar, Gujarat, Tel: +91-79-23259246
6.	Date of opening tender for Technical Bid (physical)	15/04/2020 at 16:00 hrs. in the office of Gujarat State Disaster Management Authority, Block No. 11, 5 th Floor, Udyog Bhavan, Gandhinagar, Gujarat, Tel: +91-79-23259246
7.	Date of opening of Price Bid of technically qualified bidders	Will be informed to the technically qualified bidders by GSDMA

SIGNATURE & STAMP OF BIDDER



IMPORTANT INSTRUCTIONS FOR BIDDERS:

- 1 The interested Bidders shall satisfy Tender Qualifying Requirement as stipulated in Section-III.
- 2 One bidder can bid for one or more or all the eleven schedules.
- 3 Tender Fee, EMD and Technical Bid with all the relevant documents as per requirement of the Tender (**Excluding price bid**) must be submitted as hard copy. While submitting the hard copies the bidder should invariably submit his tender in three sealed envelopes with all the relevant documents as per the requirement of the Tender (**Excluding Price Bid**). The three sealed envelopes should be suitably super scribed as follows:
 - **Envelope 1:** “Tender Notice No. 2 /GSDMA/Fire Fighting and Search & Rescue Equipments/2020, Tender Fee”
 - **Envelope 2:** “Tender Notice No. 2 /GSDMA/Fire Fighting and Search & Rescue Equipments/2020, EMD /Exemption Certificate”
 - **Envelope 3:** “Tender Notice No. 2 /GSDMA/Fire Fighting and Search & Rescue Equipments/2020, Technical Bid”
- 4 The three sealed covers should be enclosed in a larger envelope duly sealed and super scribed as “**Tender Notice No. 2** GSDMA/Fire Fighting and Search & Rescue Equipments/2020, **Tender Opening Date 15/04/2020**” and should be strictly submitted by RPAD / Speed Post/Courier/By Hand only, before the due date and time. Otherwise the offer will not be considered and no any further communication in the matter will be entertained
- 5 Bidders are requested to submit **Price bid (Schedule B) online only** and **not to submit the Price bid in physical form for all the schedules separately**. This is mandatory. If price bid is submitted in physical form, same will not be opened and only on-line submitted price will be considered for evaluation.
- 6 The Tender Fee will not be refunded under any circumstances.
- 7 Earnest Money Deposit (EMD) in the form specified in Tender Document only shall be accepted.
- 8 The offer shall be valid for 180 days from the date of opening of the Technical Bid.
- 9 Tenders without EMD or Tender Fee or Exemption Certificate for non-payment of EMD or Tenders which do not fulfill all or any of the conditions or submitted incomplete in any respect will be rejected.
- 10 The award of contract shall be made to qualified Bidders, whose responsive Tender is determined to be the lowest evaluated Tender and who meets appropriate standards of Technical and Financial resources and satisfy the Qualifying Criteria as laid in the Tender Documents.
- 11 Conditional Tender shall not be accepted.
- 12 The jurisdiction of any dispute will be Gandhinagar /Ahmedabad.



- 13 Submission of a tender by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specification of the goods to be delivered and local conditions and other factor bearing on the execution of contract.
- 14 Wrong / Fraudulent data submission may lead to disqualification. Please ensure that you furnish correct data.
- 15 Chief Executive Officer, Gujarat State Disaster Management Authority (CEO, GSDMA) reserves the rights to reject any OR all tenders without assigning any reasons thereof.

INSTRUCTIONS TO BIDDERS FOR ONLINE TENDER PARTICIPATION:

- 1 Tender documents can be downloaded free from the website <https://www.nprocure.com> OR www.gsdma.org
- 2 All bids should be submitted online from the website <https://www.nprocure.com>
- 3 All bids should be digitally signed (as per Information Technology Act 2000), for details regarding digital signature certificate and related training involved the below mentioned address should be contacted

(n)Code solutions (A division of GNFC)

301, GNFC Info-tower, Bodakdev, Ahmedabad- 380 054 (India)

Tel: +91-79-26857316 / 17 / 18, Fax: +91-79-26857321

www.ncodesolutions.com

- 4 The bidder can get a copy of instructions to online participation from the website <https://www.nprocure.com>
- 5 All queries regarding use of digital signature certificate should be addressed to personnel in M/s (n) Code Solutions.
- 6 All queries on the tender document, technical specifications and clauses of the contract should be addressed to:

Gujarat State Disaster Management Authority

Block No. 11, 5th Floor, Udyog Bhavan,

Gandhinagar – 382013, Gujarat

Tel: +91-79-23259246/501

Fax: +91-79- 23259275

Email: info@gsdma.org /ast-dir-gsdma@gov.in

- 7 Please quote Tender Notice No. and Tender Name in all your correspondence.
- 8 Bidders are requested to bring in written queries on tender document, technical specifications and clauses of the contract during the pre-bid meeting. **All queries must be submitted either in written to GSDMA or through email to sksgsdma@gmail.com by 12:00 Hrs. of 10/04/2020. Any query reaching after that will not be entertained by GSDMA.**

This notice of tender and subsequent Corrigendum (if any) shall also form a part of Contract Document.

For and on Behalf of
Gujarat State Disaster Management Authority

Chief Executive Officer

Date: 13/03/2020

Place: Gandhinagar



SECTION - I

DETAILED INFORMATION & INSTRUCTIONS FOR BIDDERS

1. Download of Tender Documents

The tender documents are available in electronic form from 13/03/2020 to 15/04/2020 up to 14:00 hrs from the website www.gsdma.org or <https://www.nprocure.com>. Interested Bidders can view and download tender documents till 15/04/2020 up to 14:00 hrs. Only those bidders, who wish to submit this tender, will have to pay the Tender fees on the due date as specified in Schedule of Tendering of the Tender Notice. Tender of only those bidders who have submitted their Tender fees on the due date as specified in the Tender Notice will be opened. The tender documents in hard copy (Print Version) will not be available. Those bidders who wish to have the hard copy (Print Version) can download the tender document and take the print out of the same. The Tender fee will not be refunded under any circumstances.

2. Cost of Bidding

All costs and expenses incidental to preparation of the bids, to attend discussion and conferences, if any, including pre award discussion with the successful Bidder, technical and other presentation including any demonstration, etc. shall be borne by the Bidders and GSDMA shall bear no liabilities whatsoever on such cost and expenses.

3. Language of Tender

Tender Documents shall be submitted in prescribed form in English only. All literature or correspondence in connection with Tender shall be made in English.

4. General Instructions

- 4.1. The Tender Document shall be submitted as per procedure laid down in Para 12 of Section-I for submission of Tender.
- 4.2. **Earnest Money Deposit (EMD) and Tender fee shall be submitted (as per Para 6 of Section-I) in both electronic format through online (by scanning) while uploading the bid and in original (hard copy) while submitting the Technical Bid.** This submission shall mean that EMD and Tender fee are received for purpose of opening the bid. Accordingly bids both Technical & Price of those shall be opened whose EMD / Exemption Certificate & Tender fee is received. Penal action for not submitting EMD / Exemption Certificate and Tender fee in original to GSDMA by bidder shall be initiated and the Bid shall be rejected.
- 4.3. Only offline details for EMD & Tender fee shall not be considered.
- 4.4. Tender shall be opened as per procedure laid down in Para 13 of Section-I and respective Para of Tender Notice.
- 4.5. All Bidders are cautioned that tender containing any deviation from the contractual terms and conditions, specifications or requirements shall be rejected as non-responsive.
- 4.6. Conditional offer will be out-rightly rejected. No condition shall be included in this tender
- 4.7. Alternative tenders are not acceptable.
- 4.8. Award of contract will be made to a qualified bidder whose responsive Tender is determined to be the lowest evaluated tender with due consideration to his maximum Physical and Financial capacity to Bid, number of individual Bids in which his Bid happens to be the



Lowest responsive Bid and as per the Least Cost Combination as may be advantageous to GSDMA.

- 4.9. If required, GSDMA may negotiate with the lowest evaluated responsive bidder.
- 4.10. CEO, GSDMA reserves the right to qualify / disqualify any applicant without assigning any reason.
- 4.11. Bidder shall be disqualified if they have
 - 4.11.1. Made untrue or false representation in the forms, statements and attachments required in the tender documents, or
 - 4.11.2. Record of poor performance either due to technical or financial or any other reasons.
- 4.12. The request of the Bidder for not opening of Bid shall not be accepted, if Bidder has submitted Tender on line and EMD & Tender fee in physical form.
- 4.13. The jurisdiction of any dispute will be Gandhinagar or Ahmedabad.
- 4.14. No tender will be accepted after prescribed closing time for submission. The delay will not be condoned for any reason whatsoever including postal / transit delay. However, if the last date of submission of tenders is declared as a holiday by the Government, the last date of submission of tenders will be extended to the next working day.
- 4.15. Bidder should read this document very carefully and comply with the instructions, terms & conditions therein. Any tender which does not confirm with the instructions / terms / conditions therein is liable to be rejected without any reference
- 4.16. All photocopies must be duly certified TRUE COPY /NOTARIZED.**
- 4.17. The bidder shall not be permitted to tender for the work in which his near relative is working in GSDMA or with GSDMA's Project Management Consultant as on date when Tender is submitted. (Note: By the term "near relative" it is meant wife, husband, parents, children, grand parents, brothers, sisters, uncles, aunts, cousins and in-laws)

5. Digital Certificate

Bidders who wish to participate in online tenders will have to procure / should have legally valid Digital certificate as per Information Technology Act-2000 using which they can sign their electronic bids.

6. Tender Fee & Earnest Money Deposit (EMD)

- 6.1. Tender Fee and EMD must reach in the office **Gujarat State Disaster Management Authority**, Block No. 11, 5th Floor, Udyog Bhavan, Gandhinagar – 382011, Gujarat, Tel: +91-79-23259246 on due date specified in the Tender Notice.

Sr. No.	Description of Goods (schedule wise)	1 Tender Fee (Rs.) 2 EMD	Tender Fee and EMD shall be in favor of	Validity of EMD
1.	1- Mist Fire Tender (Multi Purpose) with Robot Qty. 2	Rs. 15,000/- Rs. 24,00,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
2.	2- Command Vehicle Qty. 1	Rs. 2,500/- Rs. 75,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days



3.	3- Pick Up Jeep/Van Qty. 1	Rs. 1,500/- Rs. 24,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
4.	4- Hydraulic Fire Fighting Arm with five articulating section 55 meters Qty. 1	Rs. 15,000/- Rs. 36,00,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
5.	5- Emergency Rescue Vehicle/Tender Qty. 1	Rs. 15,000/- Rs. 12,00,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
6.	6- Water Bowser 20 KL: Qty. 1	Rs. 15,000/- Rs. 6,00,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
7.	7- Hydraulic Platform HLA (80 meters): Qty. 1	Rs. 15,000/- Rs. 60,00,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
8.	8- Self Contained Breathing Apparatus (SCBA) training Gallery with cleaning, testing & refilling facilities Qty. 1	Rs. 15,000/- Rs. 6,00,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
9.	9- Foam Nurser Qty. 1	Rs. 15,000/- Rs. 3,00,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
10.	10- HAZMAT (Chemical) Tender Qty. 1	Rs. 15,000/- Rs. 9,00,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days
11.	11- Personal Protection Equipments (PPE) Qty. 15 set	Rs. 1,500/- Rs. 27,000/-	Director (Finance), Gujarat State Disaster Management Authority payable at Gandhinagar	180 days



- 6.2. Tender without submission of Tender Fee and EMD / Exemption Certificate shall be rejected as non responsive. If during tender validity period, the bidder withdraws his Tender, the EMD shall be forfeited and the bidder may be disqualified from tendering for future works /procurement of GSDMA. Once the tenders are submitted it will be the responsibility of the bidder not to escape halfway directly or indirectly by way of raising any problems.
- 6.3. Bidders registered under small scale industries of Gujarat State and holding subsequent registration with CSPO/NSIC/DGS&D/MSME for the item under tender will be eligible for exemption from payment of EMD on submission of **TRUE COPY / NOTARIZED** copies of their SSI & CSPO / NSIC / DGS&D/MSME registration certificates in EMD cover. Participants not covered under this category shall have to pay EMD compulsorily as prescribed, failing which the tender will be treated as rejected at the time of opening of Bid. In such cases, Technical Bid as well as Price Bid will be ignored. Any basic document with regards to EMD will not be acceptable after closing time of tender.
- 6.4. Tender Fee shall be paid in form of Demand Draft (DD) in favor of Gujarat State Disaster Management Authority, Gandhinagar drawn on any **Nationalized Bank in Gandhinagar**.
- 6.5. EMD shall be paid in form of irrevocable Bank Guarantee (BG)/demand draft in favor of Gujarat State Disaster Management Authority, Gandhinagar issued by any Nationalized Bank. The EMD should be issued by bank only after date of advertisement of tender notice. BG should be valid up to 180 days from the date of its issuance. Form of Bank Guarantee for EMD is provided as Annexure – I
- 6.6. Payment made towards EMD will not be refunded unless bid is accepted.
- 6.7. The EMD will be returned promptly to the unsuccessful bidders except first three lowest bidders. The EMD will be returned to the first three lowest bidders after first lowest bidder furnishes Security Deposit for performance and duly enters into the contract.
- 6.8. Within one week from the date of issue of the letter accepting his Tender, the successful bidder shall furnish the required Security Deposit (SD) for performance and attend the office of the CEO, GSDMA for execution of the Contract documents. If he fails to furnish the SD for performance or to execute the Contract for the work offered to him, his EMD shall be forfeited and the bidder would be debarred from bidding any future tenders of GSDMA.

7. Delivery Period

- 7.1. Delivery Period: **120 working days from date of submission of security deposit.**
- 7.2. Description of Items & Quantities to be procured

Item (schedule wise)	Quantity (Nos.)
1- Mist Fire Tender (Multi Purpose) with Robot	02
2- Command Vehicle	01
3- Pick Up Jeep/Van	01
4- Hydraulic Fire Fighting Arm with five articulating section 55 meters	01



5- Emergency Rescue Vehicle/Tender	01
6- Water Bowser 20 KL	01
7- Hydraulic Platform HLA (80 meters)	01
8- Self Contained Breathing Apparatus (SCBA) training Gallery with cleaning, testing & refilling facilities	01
9- Foam Nurser	01
10- HAZMAT (Chemical) Tender	01
11- Personal Protection Equipments (PPE)	15 set

7.3. Details of the Consignee for the delivery of the above mentioned item

Receivers Name	Place of Delivery & Installation	Quantity (Nos.)
CEO - GSDMA	Gandhinagar /Ahmedabad	As mentioned in delivery schedule



8. Accompaniments to Tender

The Bidder will have to submit hard copies of legible and certified copies of the following documents his tender. (The submission by the bidder should be hard bound and in the same sequence as requested in the tender)

- 8.1. Tender Fee & EMD in accordance with Para 6 of Section-I and the original shall also be submitted in physical form as per the Para 4.2 of Section-I
- 8.2. Manufacturing license (P.M.T. SSI No. / Industrial license / ISI Certificate / Factory Inspectors License) / Product permission (if applicable) / Registration Certificate with CSPO / SSI / KVIC / NSIC / DGS&D/MSME (whichever is applicable)
- 8.3. Partnership Deed / Memorandum and Article of Association (whichever is applicable)
- 8.4. ISO Certificate along with the declaration of manufacture of the item in the location certified by ISO in the prescribed format (ISO Certificate & Declaration is mandatory if asked in Technical Specification)
- 8.5. Original Product literature / Photograph mentioning all technical specifications & service manual if the unit price exceeds Rs.10,000/-
- 8.6. In case where item is required with ISI mark, manufacturing and selling experience of product having ISI mark will only be considered. But, in such a case, certified copies of licenses to use ISI mark for last one year as well as latest and valid license are to be submitted with tender. The license should be valid during the period of contract. It will be the sole responsibility of supplier to ensure that necessary certificate and permission must be valid till the expiry of the contract. In no case the certificate should be dated earlier than one year (unless otherwise specified) and should be in force and valid on the last date of the submission of the tender / signing of the agreement (as the case may be). In case, the certificates / licenses / permission are outdated or the validity period is over, the proof of applying for renewal should also be attached. Such certificates will be considered if the renewal has been applied for within the time limit prescribed for the renewal of that permission / license / certificate under the relevant rules and further if such application for renewal is not specifically rejected by the competent authorities. In case any certificate is still awaited from the competent authority, the proof of making the application should also be attached which will be considered if the application is not specifically rejected by the competent authorities.
- 8.7. List of essential accessories required to operate the goods / stores / material/(s) (if any)
- 8.8. Chartered Accountant's certificate in original for showing year wise production and sales for quoted product for last three (3) financial years
- 8.9. Duly filled in Declaration & Memorandum form as provided as Annexure-II & Annexure – III
- 8.10. Valid Certificate of exemption for payment of EMD
- 8.11. Power of Attorney (PoA) duly authorized by a notary public, if power is delegated for signing the Bid to other person by the Bidder.

ALL PHOTO COPIES MUST BE SUBMITTED DULY CERTIFIED TRUE COPY / NOTORISED.

9. Method of Tendering

- 9.1. If the Tender is uploaded by an individual, it shall be digitally signed by the individual.
- 9.2. If the Tender is uploaded by a proprietary firm, it shall be digitally signed by the proprietor.



- 9.3. If the Tender is uploaded by a firm in partnership, it shall be digitally signed by all the partners of the firms or alternatively by a partner holding PoA for the firm in which case a certified copy of the PoA shall accompany the tender, a certified copy of the partnership deed, full name, current address of the firm, current addresses of all the partners of the firm shall also accompany the tender.
- 9.4. If the Tender is uploaded by a limited company or a corporation, it shall be digitally signed by a duly authorized person holding the PoA for signing the Tender in which case a certified copy of the PoA shall accompany the Tender. Such limited company or corporation may be required to furnish satisfactory evidence of its existence before the Contract is awarded. They shall also furnish Articles of Memorandum of Association.
- 9.5. If the Firm submitting the tender is a Member of a Group of Companies (with a common name), all relevant documents clearly indicating the stake of the bidding Firm in the equity of each firm of the Group, Turnover, Net Tangible Worth and Cash Flow of each company wherein the stake of the Bidding Firm is 51% or more in terms of equity shall be furnished at the time of online submission of Bid.
- 9.6. In case at time of Tender uploading, if any of the above information has changed then the bidder shall correct the same by making the modification in his personal profile.
- 9.7. All digital signatures in the tender documents shall be dated.
- 9.8. Regarding the process of e-tendering, the necessary guidance can be obtained from

Manager (Marketing)

(n) Code solutions (A division of GNFC)

301, GNFC Info tower, Bodakdev, Ahmedabad- 380 054 (India)

Tel: +91-79-26857316 / 17 / 18, Fax: +91-79-26857321

www.ncodesolutions.com

10. Eligibility

- 10.1. The bidders should be meet the applicable qualification criteria specified in Section-III.
- 10.2. Bidders shall provide such evidence of their eligibility satisfactory to GSDMA, as the GSDMA shall request.
- 10.3. Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued or blacklisted by the GSDMA or any department of Government of Gujarat or any State within India in accordance with Para 19 of Section-I.
- 10.4. A Bidder shall not have any conflict of interest as provided in Para 11 of Section-I.

11. Conflict of Interest

- 11.1. Each bidder shall submit only one (1) bid for each contract (Tender). A bidder who submits or participates in more than one (1) bid for the same tender will be disqualified.
- 11.2. All bidders found to be in conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in a bidding process if they:
 - 11.2.1. have controlling shareholders in common; or
 - 11.2.2. receive or have received any direct or indirect subsidy from any of them; or
 - 11.2.3. have the same legal representative for purposes of a bid; or



- 11.2.4. have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on a bid of another bidder, or influence the decisions of GSDMA regarding the bidding process; or
- 11.2.5. Participated as a consultant in preparing the design or technical specifications of the goods and related services or works that are the subject of a bid.

12. Submission of Tender

- 12.1. The bidder shall fill the required details / data / information in the prescribed form of Tender document.
- 12.2. For Each Schedule separately - Tender Fee, EMD and Technical Bid with all the relevant documents (including Annexures & Schedules **excluding Price Bid**) as per requirement of the Tender must be submitted as **HARD COPY**. While submitting the hard copies the bidder should invariably submit his tender in three sealed envelopes with all the relevant documents as per the requirement of the Tender (**Excluding Price Bid**). The three sealed envelopes should be suitably super scribed as follows:
- Envelope 1: “**Tender Notice No. 2 /GSDMA/Fire Fighting and Search & Rescue Equipments/2020, Tender Fee**”
 - Envelope 2: “**Tender Notice No. 2 /GSDMA/Fire Fighting and Search & Rescue Equipments/2020, EMD /Exemption Certificate**”
 - Envelope 3: “**Tender Notice No. 2 /GSDMA/Fire Fighting and Search & Rescue Equipments/2020, Technical Bid**”
- 12.3. The three sealed covers should be enclosed in a larger envelope duly sealed and super scribed as “**Tender Notice No. 2 /GSDMA/Fire Fighting and Search & Rescue Equipments/2020, Tender Opening Date 15/04/2020**” and should be strictly submitted by RPAD / Speed Post / Courier / Hand only, before the due date and time for each schedule separately.
- 12.4. No tender will be accepted after prescribed closing time for submission of the same. The delay will not be condoned for any reason whatsoever including postal / transit delay. However, if the last date of submission of tenders is declared as a holiday by the Government, the last date of submission of tenders will be extended to the next working day.
- 12.5. Bidders are requested to submit **Price bid (Schedule B) ONLINE** only and not to submit the Price bid in physical form for each schedule separately. This is mandatory. If price bid is submitted in physical form, same will not be opened and only on-line submitted price will be considered for evaluation.
- 12.6. The Rates for items in **Schedule – B** must be submitted in figures only on the e-tendering website. Amount in words will be automatically generated by system. Total amount of each item and the grand total in figures and the respective words will be automatically calculated and displayed.
- 12.7. GSDMA at its discretion can extend the last date for submission of Tender by amending the Bid Document in which case all rights and obligations of GSDMA and Bidder will thereafter be subject to the last date as extended. The Bidder shall be responsible for extending the Validity of Tender Offer accordingly, failing which his Bid shall be rejected as non-responsive.
- 12.8. Telegraphic Tender will not be entertained.
- 12.9. The bidder should read this document very carefully and comply with the instructions / terms / conditions therein. Any tender which does not confirm with the instruction / terms / conditions therein is liable to be rejected without any reference.

SIGNATURE & STAMP OF BIDDER



- 12.10. No modification should be done by the bidder in the name of item, and in the specifications / grade / quality / packing of the item given in the tender document. In **Schedule - A (Technical Bid)** all information asked / required including specification available in offered models should be mentioned clearly. Additional specifications / features if any available in the offered models shall be provided in additional sheet. In **Schedule – B (Price Bid)**, the rates, with break up shown in the formats provided with the tender documents to be quoted.
- 12.11. The detailed required specifications of the equipment / goods to be purchased are shown in **Section - IV**. The bidder should confirm that the items offered are conforming to these specifications in **Schedule - A (Technical Bid)**. Offers with minor deviation in non-critical specification shall be considered subject to overall acceptability of products in terms of its utility.
- 12.12. The bidder should arrange demonstration of equipment / goods offered as and when desired at their expense failing which his / their tender shall liable to be ignored. In case where samples are required to be submitted, it should be kept ready and submitted as and when demanded in duly sealed pack super scribed with details of Tender Notice No., Due Date, Name and Address of Bidder, make / Model etc. failing which offer shall liable to be rejected.
- 12.13. The rates shown in **Schedule – B (Price Bid)** shall be presumed, in all cases, as the net price inclusive of all duties and sundries which includes but not limited to all taxes, royalties, octroi, costs, fees, duties, insurance, transportation, loading and unloading charges FOR consignee's stores, giving basic price ex factory and other item wise charges. No payment against any duty / delivery charges etc. will be considered under any separate heading under any circumstances.
- 12.14. The quoted rates will be valid for **120 days** from the date of opening of technical bid. Rates once quoted will be final and will not be allowed to be increased during the validity period under any circumstances and for any reason whatsoever.
- 12.15. The rates should be comprehensive incorporating the cost of the instrument / equipment and accessories required as part of the equipment and shown as such in the enquiry document. In case any item is required as an essential accessory for operating the equipment, it must be mentioned clearly in **Schedule - A (Technical Bid)** and its rates must be included in the rates for the equipment in **Schedule – B (Price Bid)**. If not mention of such essential accessories is made in **Schedule - A (Technical Bid)** or if its rates are not shown in **Schedule – B (Price Bid)**, it will be presumed that the cost of essential accessories is included in **Schedule – B (Price Bid)** and no separate payment for the same will be made thereafter under any circumstances. If any accessory is demanded as mandatory in the tender enquiry, under no circumstances it should be shown as an optional accessory and quoted separately. The price of the product offered must include the accessories required for operation of the instrument and no separate payment will be made even if such an accessory is not included in the quotation. Only those accessories which are specifically recommended by the manufacturer of the instrument / equipment should be offered as part of the equipment and under no circumstances a cheaper variety of an accessory not approved / recommended by the manufacturer should be offered.
- 12.16. **Schedule – B (Price Bid)** with errors will be, rejected. No variation in the terms and conditions of the tender, including major deviation from standards / specifications / terms of supply will be accepted. No claim for additional payment beyond the prices / rates quoted will be entertained and the bidder will not be entitled subsequently to make any claim on the ground of misrepresentation / misinterpretation or on the ground that he was supplied with information given by any person (Whether the member is an employee of GSDMA or not). Any failure on the bidders part to obtain all necessary information for the purpose of making his Tender and quoting the prices and rates therein shall not relieve him from any risk or liabilities arising out of or consequent to the submission of the tender.



- 12.17. **IN NO CASE, RATES SHOULD BE QUOTED IN ANYWHERE EXCEPT IN PRICEBID.**
- 12.18. Every Blank (fields) in the Tender document (Forms, Schedule, etc.) must be filled up by the Bidder. Use of dash (-) is not permitted. Please write “NOT APPLICABLE” or “NIL” as and where required by Bidder.
- 12.19. In the event of any error or discrepancy in write up of tender documents the bidder will not take any undue advantage of such error or discrepancy and CEO, GSDMA shall have powers to interpret and decide correct meaning of contradictory erroneous writing.

13. Opening of Tenders

The Designated Officer/(s) of GSDMA will open tender as per schedule of tendering as provided in the Tender Notice in the presence of intending bidders or their representative who wish to remain present at that time. The intending Bidders, if they wish may participate in online Tender opening process and view the result on <https://www.nprocure.com>, will have to log in with his user ID and password and click on “mark my attendance button” to view Tender result. For more details refer Para 9.8 of Section-I.

13.1 Opening of Tender Fee and EMD Cover

At the first instance Tender Opening Officer will open and scrutinize the Tender fee cover and EMD cover. In following situation the tender shall be liable to be rejected at the time of opening of EMD cover.

- a. If required Tender fee and EMD amount is not paid.
- b. If Tender fee and EMD is not paid in the prescribed form.
- c. Documents for claiming exemption are not enclosed.

13.2 Opening of Technical Bid

The Designated Officer/(s) of GSDMA after verification of Tender fee and EMD will open Technical Bid for the all the eligible bidders at the address specified in the Tender Notice. The evaluation of Technical Bid will be done as per **Schedule A**

13.3 Opening of Price Bid

The **Schedule – B (Price Bid)** will be opened of only those bidders whose quotations satisfy the technical requirement as specified in the Tender Document and are otherwise acceptable. The date of opening of **Schedule – B (Price Bid)** will be intimated to the qualified bidder.

- 13.3.1 The Designated Officer/(s) of GSDMA will open each Price Bid on the date and time mentioned in the Tender or on extended date and take print out of total amount quoted in the Tender along with rate quoted for each part of Bid Schedule and the conditions if any put forth by the Bidder. The Bidder can see his Price Bid as well as other Bidders’ entire Price Bid who have participated in the e-Tender. The **Schedule – B (Price Bid)** will be accessible up to 24 hours from the date and time of Tender opening for security reasons. For future reference, Bidders are requested to save or take print out of the same data.
- 13.3.2 The Price Bids will be opened ONLINE, irrespective of the presence of the Bidder.



14. Tender Offer Validity Period

- 14.1 The Tender offer for the work shall be valid for a period not less than One Hundred Eighty (180) days from the date of opening of the Technical Bid. The same may be extended by the Bidder for a further period of One Hundred Eighty (180) days, if required by GSDMA. The bidder shall not be allowed to withdraw or modify the offer on his own during this period. If any bidder withdraws or make any modification or additions in the terms and conditions and tender validity period of his tender offer is not acceptable to the GSDMA, then the GSDMA shall without prejudice to any right or remedy, be at liberty to forfeit in full, the said EMD absolutely.
- 14.2 In exceptional circumstances, GSDMA may solicit the Bidder's consent for an extension of the period of validity of the Tender offer by a period not exceeding another One Hundred Eighty (120) days.
- 14.3 The request and response shall be made in writing or by tele-fax and email. If a Bidder accepts to extend the period of validity, the validity of EMD shall also be extended according to provision of Para 6 of Section-I. In case of refusal by Bidder for extension of validity period his EMD shall be returned. Any Bidder granting the request of extension of offer validity period will not be permitted to modify his / their Bid.

15. Evaluation of Tender & Technical Scrutiny of the Sample

- 15.1. Technical evaluation will be made based on Criteria fixed in Para 10 of Section-I and the documents submitted as per the **Schedule - A (Technical Bid)**.
- 15.2. The technical scrutiny of the items will be carried out by a committee of experts nominated by the Chief Executive Officer, GSDMA which may also include demonstration / sample testing and the report of the scrutiny committee shall be final and binding upon the bidder. In case there is a discrepancy in the claim made by the bidder and the specifications shown in the product literature / circuit diagram / photograph, reliance will be placed on the specifications shown in the product literature / circuit diagram photograph, ignoring the claim of the bidder. Any change or alteration in the product literature / circuit diagram/ photograph must be authenticated by the manufacturer and an affidavit from the manufacturer for supplying the item as altered or changed should also be submitted failing which such changes / alterations will be ignored.
- 15.3. If it is found, at any later stage that Bidder has hidden any material detail or given false details the Bidder shall be disqualified and his EMD shall be forfeited and he will be debarred from bidding future tenders of GSDMA.
- 15.4. Bidders will be qualified based on the Technical evaluation as per Para 15.1 above. A list of qualified Bidders shall be prepared. The **Schedule – B (Price Bid)** of only qualified Bidders shall be opened and evaluated.
- 15.5. To assist in the examination, evaluation and comparison of Tenders, the GSDMA may ask the bidders individually for clarification / explanation / documentary evidence of their tenders. The request for clarification and the response shall be in writing or tele-fax and through email communication but no changes in the price or substance of the tender shall be sought, offered or permitted. However any clarification / explanation or documentary evidence leads to implication on quoted price shall be considered only for placing the order but not for price evaluation.
- 15.6. The Tenders will be verified for accuracy in numerical calculations. Any Tender with arithmetical mistake will be corrected on the basis of the quantities of work given in the tender form and the unit price quoted by the bidder.



- 15.7. A substantially evaluated responsive Bid is one which confirms to all the terms, conditions and specifications of the Bid Documents without material deviation or reservation. The material deviation or reservations is one
- which affects in any substantial way the scope, quality or performance of the works.
 - which limits in any substantial way inconsistent with bid documents, the GSDMA's right or the bidder's obligations to the contractor
 - Whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.
- 15.8. As per Government's prevailing purchase policy, a order / price preference shall be available to Gujarat based SSI / TINY / COTTAGE Industries registered for quoted items subject to providing required documents like respective registration certificate issued by concerned authority. For this purpose, a guide lines given by the Govt. of Gujarat, Industries and Mines Dept., resolution No.SPO/1095/2636 (97)/CH dated 23/09/1997 amended from time to time will be followed. In such a case the decision of Purchase Committee shall be final and implemented forthwith.
- 15.9. **Evaluation criteria:** Award may be made to the bidder whose responsive tender is determined to be the lowest evaluated tender and who meets the appropriate standards of capacity and financial resources.

16. Acceptance of Tender

- 16.1. The tender is liable for rejection due to any of the reasons mentioned below:
- Non-Submission of tender within stipulated time.
 - Tender is unsigned OR not initialed on each page or with unauthenticated corrections.
 - Submissions of tender documents in unsealed envelop.
 - Tender not submitted in separate envelopes as per conditions and the envelopes are not super scribed with details of the tender enquiry and parten closed.
 - Non-payment of Earnest Money Deposit (if not exempted)
 - Non-submission of required documents as shown in Para 8 of Section-I above.
 - Conditional and / or vague offers
 - Unsatisfactory past performance of the bidder.
 - Rates have been shown elsewhere than **ONLINE Schedule – B (Price Bid)**
 - Items with major changes / deviations in the specifications / standard / grade / packing / quality are offered in **Schedule - A (Technical Bid)**.
 - Offering a cheaper accessory not approved / recommended by the manufacturer.
 - Offering an accessory as optional even though it is required to operate the instrument.
 - Submission of misleading / contradictory / false statement or information and fabricated / invalid documents.
 - Tenders not filled up properly
 - Non-submission of Charter Accountant Certificate in case of manufacturer
- 16.2. Any conditional discount given by the bidder such as discount applicable on total order value, minimum order value on certain group of items etc. will not be considered for evaluation purpose. However, for ordering purpose, such discount shall be considered.



- 16.3. Discount offered after price bid opening shall also be not considered for evaluation. However in a case bidder happens to be selected bidder (without considering discount) such discount shall be considered while placing the order.
- 16.4. The consolidated rates will be taken in to account for preparing price statement. However, the tender which is found technically acceptable as well as lowest in terms of evaluated rates only be considered for placing the order but, order will be placed at quoted or mutually agreed price.

17. Right of Rejection

- 17.1. Those Tenders which do not have Digital Signature attached shall be rejected.
- 17.2. Tender without EMD, will be treated as non responsive and will be out rightly rejected.
- 17.3. CEO, GSDMA reserves the rights to accept or reject any bid or to cancel the Bidding process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders on the grounds of the GSDMA's action.

18. Particular Provision

The particulars of the goods given herein as well as in the accompanying Annexures must be considered only as advance information to assist bidders.

19. Corrupt or Fraudulent Practices

GSDMA require that bidders / suppliers / contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy:

- 19.1. GSDMA defines for the purposes of this provision, the terms set forth below as follows:
 - 19.1.1. “corrupt practice” means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
 - 19.1.2. “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.
- 19.2. GSDMA will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- 19.3. GSDMA will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded an GSDMA contract if at any time it determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, an GSDMA contract.



20. Special Instructions

- 20.1. The bidder must satisfy that they are in possession of the requisite permissions / licenses / permits required for the supply of the items for which the offer is made. **FAILURE TO ENTER INTO CONTRACT IF SELECTED OR TO EXECUTE THE PURCHASE ORDERS AFTER ENTERING INTO CONTRACT FOR WANT OF PERMISSION / LICENSE OR DUE TO NON-SUPPLY OF CERTIFICATES / DOCUMENTS WILL BE VIEWED SERIOUSLY AND WILL INVITE FOREITURE OF E.M.D. / RISK PURCHASE / DISQUALIFICATION FOR APPROPRIATE PERIOD WITHOUT ANY FURTHERREFERENCE.**
- 20.2. **THE BIDDER HAS TO SUBMIT ALL THE REQUIRED DETAILS / DOCUMENTS AND SAMPLE ETC. WITH THE TENDER.**
- 20.3. CEO, GSDMA does not pledge himself to accept the lowest or any tender and also reserves the right to accept the whole or any part of the tender against any item at his discretion. The tender will be accepted if CEO, GSDMA, is satisfied about the production, sale, quoted price technical details, utility of products and past performances of bidder.
- 20.4. Security Deposit (SD) is payable by all the parties except by the undertakings and corporations of the Government of Gujarat which are exempted by Government. SD submitted in connection with the earlier contracts and which are locked with those contracts and which have not been released till date will not be considered and fresh SD separately for each item must be submitted in such cases. The SD shall be refunded only after satisfactory execution of the contract and recovery of dues, if any.
- 20.5. Successful bidder shall enter into agreement for due performance of the contract. The agreement form provided as an Annexure VI to the Tender Document should be stamped with the adhesive stamp for the requisite amount, and signed before any Gazetted Officer of this Office or before an I Class Magistrate or Notary Public.
- 20.6. The Supplier holder should supply the, goods / stores / material/(s) in fresh and sound condition meeting with the specification and packing approved by the CEO, GSDMA. Refurbished or second-hand goods / stores / material/(s) will not be allowed under any circumstances. If such case is noticed, than the store will be rejected out rightly and penal action will be taken against the Supplier.
- 20.7. Period of Delivery will be one hundred twenty days (120) days from the date of submission of Security Deposit.

*To facilitate speedy execution of the procurement process, supplier shall be aided by to carry out the work and delivery as per instructions of concern GSDMA officials.



SECTION - II

TERMS AND CONDITIONS OF CONTRACT

1. Definitions

Unless repugnant to the subject or context thereof, the following expressions herein used shall carry the meaning hereunder respectively assigned to each, namely:

- a. **Approved / Approval** means approved in writing.
- b. **Contract** means the contract entered between GSDMA and Supplier and as derived from tender documents, agreed variations to the tender documents, supplier's Price Bid and the Purchase Order.
- c. **Contract Document(s)** means individually and collectively the documents constituting the contract
- d. **Contract Price** means the price payable to the Supplier as specified in the Contract, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract
- e. **Day** means calendar day
- f. **Indenter / Employer / Owner / Purchaser** means Gujarat State Disaster Management Authority / GSDMA and includes its legal successor.
- g. **Inspectors** means Inspectors nominated, appointed, approved or deputed by GSDMA for inspection of the goods / stores /material(s)
- h. **IS** means Indian Standards, prescribed by the Bureau of Indian Standards
- i. **Goods / Stores / Material(s)** means any and all raw materials, manufactured articles, equipment, spares and other goods and supplies whatsoever and includes wherever applicable drawings, data, specifications and intellectual property rights and all services (including but not limited to design, fabrication, inspection, delivery and testing) required to be supplied, done, performed, prepared or undertaken to meet the requirements of the Contract.
- j. **Project Management Consultants** means the representative or agency appointed by GSDMA for managing, expediting and / or coordinating the supply of goods / stores / material(s).
- k. **Purchase Order** means GSDMA's acceptance of the Supplier's offer / bid and includes any formal or detailed Purchase Order issued by GSDMA pursuant to the acceptance of the tender.
- l. **Delivery Period** means the date(s) for delivery of the goods / stores / material(s) as stipulated in the Contract and failing such stipulation, shall mean the date(s) for such delivery(ies) as agreed between the Supplier and GSDMA
- m. **Tender Documents** with reference to the Purchase Order means the instruction & information, general rules and direction for bidders, general terms and conditions of purchase, specification, drawings , the schedules of quantities and tender prices, the formal agreement, special conditions of purchase and all addenda (including corrigendum if any) and attachments related to the above
- n. **Services** means services ancillary to the supply of the material(s), such as transportation and 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
- o. **Supplier** means the particular person, firm or Company or Group of firms or Companies or his designated representative to whom the Purchase Order is placed for supplying the goods / stores / material(s) and services under this Contract and includes his legal successors.



- p. **Contract Value** means total value of the goods / stores / material(s) & services to be supplied as specified in the Purchase Order.

2. Interpretation of Contract Documents

- 2.1. The several Contract Documents forming the Contract are to be read together as a whole and are to be taken as mutually explanatory.
- 2.2. Should there be any doubt or ambiguity in the interpretation of the Contract Documents or in any of them, the Supplier shall prior to commencing the relative supply or work for supply under the Contract apply in writing to GSDMA for resolution of the doubt or ambiguity. Should the Supplier fail to apply to GSDMA within 7 days from the date of receipt of the Order for its clarification as aforesaid, the Supplier shall perform the relative work and / or make the relative supply at his own risk.
- 2.3. Any item of supply or service relative thereto shown, indicated or included by expression or implication in any document forming part of the Contract shall be deemed to form part of the Scope of Supply with the intent that the indication or inclusion of the supply or service within any of the said documents shall be a sufficient indication of the Scope of Supply or service covered by the Contract.
- 2.4. No verbal agreement or assurance, representation or understanding given by any employee or officer of GSDMA or so understood by the Supplier shall anyway bind GSDMA or alter the Contract Documents unless specifically given in writing and signed by or on behalf of GSDMA as an Agreed Variation to the relative term(s) in the Contract Document(s).
- 2.5. Clause headings given in this or any other Contract Documents are intended only as a general guide for convenience in reading and segregating the general subject of the various clauses, but shall not govern the meaning or import of the clauses there under appearing or confine or otherwise affect the interpretation thereof.

3. Irreconcilable Conflicts

Subject to the provisions of Clause 2 hereof, in the event of an irreconcilable conflict between the provision of these Terms and Conditions Contract and/or the Agreed Variations to the Tender Documents and / or the Purchase Order and / or between any of the other said documents so that the conflicting provision(s) cannot co-exist, to the extent of such irreconcilable conflict, the following order of precedence shall apply so that the conflicting provision(s) in the document lower in the order of precedence set out below shall give way to the conflicting provision(s) in the document higher in the order of precedence, namely:

- (i) Agreed Variations to the Tender Documents;
- (ii) Purchase Order;
- (iii) Addendum/Addenda (a) to the Tender Document;
- (iv) Terms and Conditions of the contract;
- (v) Other Contract Documents.

4. Confirmation of Order



- 4.1. Without prejudice to the formation of contract by acceptance of bid, the Supplier shall acknowledge the acceptance of the Purchase Order by signing and returning the duplicate / photocopy within seven (seven) days following receipt of the Purchase Order and such acknowledgement shall constitute conclusive evidence of a concluded contract without exception, on the terms and conditions set out in the Bid Documents.
- 4.2. Should the Supplier fail to acknowledge acceptance of the Purchase Order within the period specified above, GSDMA may, without prejudice to any other right or remedy available to it, forfeit the Earnest Money Deposit.

5. Price

- 5.1. Unless otherwise specifically stipulated, the price shall be inclusive of all taxes, royalties, octroi, costs, fees, duties, insurance, transportation, loading and unloading charges FOR consignee's stores and the details of which are provided in the Price Bid.
- 5.2. The price escalation clause will not be allowed under any circumstances except statutory taxes / duties imposed / withdrawn / increased / decreased on quoted items by the Government of Gujarat or Central Government during the period between opening of technical bid and stipulated delivery period. The statutory price variation will not be allowed in the cases where:
 - (i) Goods / stores / material(s) offered on ex-stock-basis.
 - (ii) Goods / stores / material(s) to be purchased on emergency basis.
 - (iii) Statutory variation not communicated within seven (7) days of its announcement by the Supplier
 - (iv) Price break up and prevailing rate as well as amount of taxes / duties not clearly mentioned in Price Bid.
 - (v) Duties / Taxes applicable due to mere crossing the limit of production /sales.
 - (vi) Duties / Taxes imposed / increased by the Government after stipulated delivery period

6. Security Deposit (SD)

- 6.1. The total amount of SD to be obtained from the Supplier whose tender is accepted shall be 05% (five percent) of the total value of the contract. The Supplier whose tender is accepted, shall within 1 week from the date of issue of letter accepting his tender submit initial security deposit as under, for due performance of contract.
- 6.2. SD shall be accepted only in the form of Bank Guarantee (BG) as per Annexure IV from Gandhinagar / Ahmedabad branch of any Nationalized Bank. If SD is given by the firm in the form BG then the same should be confirmed with the issuing Bank immediately.
- 6.3. However, if the BG is issued by the branch other than Gandhinagar / Ahmedabad the BG shall be operable from Gandhinagar / Ahmedabad branch in which case the BG shall be given in the form prescribed in Annexure IVA.



- 6.4. Successful bidder have to pay SD valid for a period not less than 24 months (till the end of the warranty period) required at the time of entering into agreement for the performance of the contract and same to be extended by supplier as and when desired by GSDMA.
- 6.5. Failure to pay security deposit and to execute the agreement within stipulated period shall invite disqualification of the bidder for future tenders / quotations apart from forfeiture of EMD and being liable for penalty as deemed fit by CEO, GSDMA in relation to the tender under process. SD is payable by all the parties except by the undertakings and corporations of the Government of Gujarat which are exempted by Government. The SD submitted in connection with the earlier contracts and which are locked with those contracts and which have not been released till date will not be considered and fresh security deposit separately for each item must be submitted in such case. The SD shall be refunded only after satisfactory execution of the contract and recovery of dues, if any.
- 6.6. Additional SD shall be furnished by the bidder as decided by GSDMA at the time of entering into contract, if any.
- 6.7. Any shortfall in the value of the Bank Guarantee, as a result of encashment by GSDMA either in full or in part, shall be made good by the Supplier within 7 (seven) days of notice by GSDMA to the Supplier in this behalf. Any failure by the Supplier to furnish the Bank Guarantee or to enhance the Value of the Bank guarantee as stated above shall constitute a default by the Supplier for which GSDMA shall, without prejudice to any other right or remedy available to it, be entitled to terminate the Contract with consequences as indicated in Clause 13.4, the provisions whereof shall mutatis mutant is apply

7. Terms of Payment

- 7.1. The payment shall be made to the Supplier asunder:
 - (a) **Chassis Payment:** Chassis payment shall be made against submission of Performa Invoice from the chassis OEM and against Indemnity Bond.
 - (b) **100%** percent of the invoice amount will be paid within 30 days of the delivery of the goods at the destination in good condition and submission of the documents as specified in Clause 21.
- 7.2. The payment of the bill shall be made after deducting Government dues, if any
- 7.3. The payment shall be made in Indian Rupees.
- 7.4. The payment of the bills shall be withheld in the following circumstances:
 - (a) The goods / stores / material(s) are found sub-standard or in non-acceptable condition
 - (b) Breach of condition of any contract by the Supplier
 - (c) Previous Government dues of Supplier



8. Change Orders

8.1. GSDMA may at any time, by written order given to the Supplier pursuant to Clause 28, make changes within the scope of the Contract in any one or more of the following:

- (a) drawings, designs, or specifications, where goods / stores / material(s) to be furnished under the Contract are to be specifically manufactured for GSDMA;
- (b) the method of shipping or packing;
- (c) the place of delivery; and/or
- (d) The Services to be provided by the Supplier.

8.2. If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, 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 Supplier's receipt of the GSDMA's change order.

9. Contract Amendments

Subject to Clause 8, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

10. Supplier's Drawings & Data Requirement

The Supplier shall submit drawings, data and documentation in accordance with (but not limited to) what is specified in the Purchase Requisition / Tender documents and / or Supplier's drawing and data form attached to the Purchase Order, within thirty (30) days of the Purchase Order. The types, quantities and time limits for submitting these must be respected by the Supplier and the goods / stores / material(s) shall be deemed not to have been delivered for all purposes (including payment) until completion of the said submissions to the satisfaction of GSDMA.

11. Sub-Contracts

11.1. The Supplier shall not assign the Contract in whole or part without obtaining the prior written consent of GSDMA.

11.2. The Supplier shall, notwithstanding the consent and assignment, remain jointly and severally liable and responsible to GSDMA together with the assignee, for and in respect of the due performance of the Contract and the Supplier's obligations there under.

12. Expediting

12.1. GSDMA may appoint Project Management Consultants/Officers to manage, expedite and coordinate the manufacture, shipment and / or dispatch of goods / stores / material(s) covered by the Contract.



- 12.2. The Supplier shall furnish to the Project Management Consultants/officers within ten days (10) of receiving the Purchase Order, the required number of copies of documents including but not limited to Schedule of manufacture / PERT chart, un-priced copies of sub-orders, phased programme of item-wise manufacture, testing and delivery and any other information and / or documents as may be called for by the Project Management Consultants.
- 12.3. The Project Management Consultants shall have free access to the Supplier's shop and sub-suppliers' shop during normal working hours and shall be provided all the necessary assistance and information to help him perform his job.

13. Respect for Delivery Dates & Price Discount

- 13.1. The time and date of delivery of goods / stores / material(s) as stipulated in the Contract shall be adhered to on the clear understanding that the price(s) of the goods / stores / material(s) has / have been fixed with reference to the said delivery date(s).
- 13.2. If any delay is anticipated by the Supplier in the delivery of the goods / stores / material(s) or any of them beyond the stipulated date(s) of delivery, the Supplier shall forthwith inform GSDMA in writing of such anticipated delay and of the steps being taken by the Supplier to remove or reduce the anticipated delay, and shall promptly keep GSDMA informed of all subsequent developments.
- 13.3. If any goods / stores / material(s) is / are not delivered within the delivery date(s) stipulated in respect thereof, an amount equivalent to 0.5% (subject to maximum of 10%) of the value of the contract not supplied / installed within the stipulated period per week shall be recovered as liquidated damages unless the penalty is waived by the CEO, GSDMA. Such recovery of the liquidated damages will not stop the CEO, GSDMA from carrying out risk purchase described elsewhere and the amount recovered will be in addition to the difference of the risk purchase. Once the maximum is reached, the Purchaser may terminate the contract pursuant to clause 23.
- 13.4. Without prejudice to its rights under Clause 13.3 hereof and to entitlement to discount(s) accrued in terms thereof and in addition thereto, GSDMA may at any time after the expiry of the stipulated date(s) of delivery in respect of any goods / stores / material(s), at its discretion terminate in whole or part the Contract in respect of the undelivered goods / stores / material(s) or any of them and either purchase such goods / stores / material(s) from any other available source at the risks and costs of the Supplier and recover from the Supplier any additional cost incurred by it on such purchase or recover from the Supplier without such purchase the difference between the market and contract price of such goods / stores / material(s) on the date of termination of Contract relative thereto.

14. Delays Due to Force Majeure

- 14.1. If a Force Majeure event as defined below, affecting the Supplier, arises prior to the expiry of the stipulated Delivery period in respect of any goods / stores / material(s) and the Supplier intends to claim extension of the stipulated date of delivery in respect of such goods / stores / material(s) or any of them, the Supplier must advise GSDMA by notice in writing of such event by means of communication which secures undisputed service of the notice not later than 10 (ten) days of the occurrence of the event. Such occurrence shall be duly certified by a local Chamber of Commerce or statutory authority. The Supplier shall within 10 (ten) days of the end of the Force Majeure event similarly notify GSDMA of such cessation, and of the period and goods / stores / material(s) for which an extension of delivery date(s) is consequently claimed. Such notification shall be a mandatory pre-condition to a claim for such extension.



14.2. Events of Force Majeure shall mean:

- (a) natural calamities, civil wars and national strikes which have a duration of more than seven consecutive working days; and
- (b) Strike at Supplier's works for more than ten (10) consecutive days.

14.3. Commercial hardship and third party breach, strike, shutdown or lockout other than as specified in Clause 14.2 hereof shall not constitute an event of Force Majeure.

14.4. The parties affected by Force Majeure shall use all reasonable efforts to prevent and reduce to a minimum and mitigate the effect of delays occasioned by such Force Majeure.

14.5. Subject to receipt of notices under Clause 14.1 above, the stipulated delivery date(s) may be extended by GSDMA. The decision of GSDMA on the Supplier's claim for extension of time and the time of extension and goods / stores / material(s) on which extension is given shall be final and binding on the Supplier. On the grant of such extension, the extended date shall be deemed to be the stipulated delivery date for the purpose of calculating price discount under Clause 13.3 hereinabove.

14.6. If the Supplier is prevented from fulfilling its contractual obligations for a continuous period of three (3) months because of Force Majeure, then the Supplier and GSDMA shall consult with each other with a view to agreeing on the action to be taken under the circumstances, and failing such agreement, GSDMA shall be entitled to terminate the contract in whole or to the extent that its performance is prevented by Force Majeure.

15. Warranty

15.1. The Supplier warrants that the goods / stores / material(s) sold and supplied by it to GSDMA pursuant to the Contract shall be free from any and all defects in title including but not limited to any charge, third party claim, mortgage, hypothecation, foreclosure, lien, restriction, injunction, attachment or encumbrance whatsoever and shall hold and keep GSDMA indemnified from and against any and all contrary claims, demands, actions and proceedings and all costs (including legal costs), charges, expenses and losses suffered or incurred by GSDMA as a consequence thereof and / or to defend any such claim, demand, action or proceeding.

15.2. The Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.

15.3. The Supplier shall be understood to have represented to GSDMA that the use by GSDMA / Consignees of the goods / stores / material(s) supplied by the Supplier will not infringe any third party patent rights or pending patent applications or other intellectual property rights. Accordingly, the Supplier will hold harmless and indemnify GSDMA against all costs (including legal costs), charges and expenses incurred or any damages or other sums that may be assessed or become payable under any decree or judgment of any court or under any settlement resulting from any suit, claim or action for infringement of third party patents or other third party intellectual property.



- 15.4. The warranty shall remain valid for Twenty-Four (24) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the tender document.
- 15.5. The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such
- 15.6. Upon receipt of such notice, the Supplier shall, within the period specified in the Technical Specifications, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 15.7. If having been notified, the Supplier fails to remedy the defect within the period the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

16. Inspection & Testing

- 16.1. Inspection shall normally be carried out in the premises of the Supplier. The entire goods / stores / material(s) ordered shall have to be offered for inspection in open condition if required and the same shall be repacked in presence of Inspector(s). All packing should be sealed and signed by Inspector(s) and sent to the consignee without any extra cost within twenty one (21) days from the date of receipt of inspection note. Inspection charges, including the expenses for the experts, will be payable by the suppliers.
- 16.2. Sample Testing: Sample of the goods/stores/material(s)/equipment(s) shall be collected by Inspector(s) of any authorized representative of GSDMA in the manner approved by the CEO GSDMA and will be sent for testing to an approved laboratory/institution/testing facility. Testing fee will be recovered from the supplier. **The decision of the testing authority will be conclusive, final and binding on the supplier. In all supplies of equipments/products/facility, inspection & testing charges shall be payable by the supplier.**
- 16.3. Even if the inspection and tests are fully carried out, the Supplier shall not be absolved from its responsibilities to ensure that the goods / stores / material(s), raw materials, components and other inputs are supplied strictly to conform and comply with all the requirements of the Contract at all stages, whether during manufacture and fabrication, or at the time of Delivery as on arrival at site and after its erection or start up or consumption. The inspections and tests are merely intended to prima facie satisfy GSDMA that the goods / stores / material(s) and the parts and components comply with the requirements of the Contract.
- 16.4. The Supplier's responsibility shall also not be anyway reduced or discharged because GSDMA or GSDMA's representative(s) or Inspector(s) shall have examined or commented on the Supplier's drawings or specifications or shall have witnessed the tests or required any chemical or physical or other tests or shall have stamped or approved or certified any goods / stores /material(s).
- 16.5. Unless otherwise specifically permitted by the Contract, no goods / stores / material(s) shall be dispatched for delivery or delivered under the Contract without being stamped or otherwise approved for delivery by the Inspector(s).



- 16.6. Notwithstanding approval by the Inspector(s), if on testing and / or inspection after receipt of the goods / stores / material(s) at destination of consignee, any goods / stores / material(s) is / are found not to be in strict conformity with the contractual requirements or specifications, GSDMA shall have the right to reject the same and hold the Supplier liable for non-performance of the Contract. The provision of Clause 17.3to 17.5 shall mutatis mutandis apply to such rejected goods / stores /material(s).

17. Acceptance of Goods / Stores / Material(s), Guarantees & Risk Purchase

- 17.1. The Supplier acknowledges that notwithstanding the provision or approval of any drawings, designs, specifications, source of supply or other data relative thereto by GSDMA and / or the testing of goods / stores / material(s) in accordance with the requirements of the Contract or any applicable code or specification and / or any inspection of the input or goods / stores / material(s) by the Inspector(s) or issue of an Inspection Certificate relative thereto and / or any other act, matter or thing done or required by GSDMA to satisfy itself of the quality, quantity, sufficiency or efficiency of the goods / stores / material(s) prior to delivery thereof and / or the transfer of title and / or risks in relation to the goods / stores / material(s), shall not be deemed or understood to constitute acceptance of the goods / stores / material(s) by GSDMA nor shall GSDMA be understood to have accepted any goods / stores / material(s) other than plant, machinery, equipment and parts and components unless such goods / stores / material(s) have been received by the Consignee and found to be acceptable as evidenced by a Certificate of Acceptance issued by Consignee, and in case of plant, machinery, equipment and parts and components, unless they have been tested and the relative plant, machine, equipment, part or component has successfully functioned without patent defect.
- 17.2. To this end, the Supplier guarantees that:
- (i) All goods / stores / material(s) used in the execution of the Contract and all goods /stores / material(s) used in performance thereof shall be in strict compliance and conformity to the characteristics, requirements and specifications of the Contract and suitable for the purpose for which such goods / stores / material(s) are intended to be used if such purpose has been disclosed or is/are suitable for use to which such goods / stores / material(s) are ordinarily put to use, if such purpose has not been disclosed.
 - (ii) In the case of machinery, plant or equipment with rated capacities, outputs or other characteristics, that the machinery, plant or equipment as the case may be, shall function to such capacities and/or outputs and shall meet the other characteristics required in respect thereof.



- 17.3. The Supplier further undertakes to replace any goods / stores / material(s) if found not to conform to the guarantees aforesaid at any time during the period not less than 12 months from the date of delivery and / or installation. GSDMA shall give written notice of the defect to the Supplier and of the rejection of the defective goods / stores / material(s). The supplier shall be liable to replace the entire quantity of the relevant order within the period as decided by CEO, GSDMA or make full payment of the entire consignment against the particular invoice, irrespective of the fact that part or full quantity of the goods/ stores / material(s) supplied may have been consumed. The decision of the CEO, GSDMA taken on the basis of the report of the competent laboratory regarding goods / stores / material(s) not of standard quality will be final and binding. The stock of any item which has been declared not of standard quality shall be withdrawn from all the Consignees / Purchaser and will not be returned to the Supplier but will be destroyed by the organization and the contractor shall have no claim over such goods / stores / material(s). If the replacement or payment as specified is not made by the supplier, the procedure for risk purchase as shown in Clause 17.4 will be initiated without any further reference or intimation to the contractor, however, the CEO, GSDMA may ask for supply of 25% of the original consignment to meet any exigency of the situation. **Neither claim for relaxation of replacement for return of goods / stores / material(s) declared to be not of standard quality nor any request for acceptance of the replacement goods delayed after the delivery period, due to any reason whatsoever, will be entertained.**
- 17.4. **Risk Purchase:** The risk purchase of the items ordered at the cost and risk of the supplier will be carried out when the supplier fails to:
- (a) Supply the goods / items / material(s) as per the orders placed by either GSDMA / Consignee within the delivery period;
 - (b) Replace the goods / item / material(s) declared to be not of standard quality or not conforming to acceptable standards or found to be decayed / infected / spoilt before the date of expiry or to refund the cost of such goods / item /material(s).
- Provided however that in cases of (b) above, the risk purchase will be limited to the quantity so specified therein.
- The Risk Purchase will be done at any-time after the delivery period is over. The Risk Purchase will be done for undelivered quantity of the Stores & the Contractor shall be penalized to the extent of 10% or difference whichever is higher.
- 17.5. Whenever under this contract any sum of money is recoverable from the Supplier & payable by the contractor to the CEO, GSDMA, or an officer empowered by him, including the difference arising due to risk purchase, will be recovered in the following manner:
- (i) From any pending bills of the supplier;
 - (ii) From any EMD / SD of the supplier;
 - (iii) If amounts at (i) & (ii) above are not sufficient then remaining balance due will be recovered as arrears of "LAND REVENUEDUES"

18. Weights &Measurements

- 18.1. The shipping documents, invoices, packing lists and all other relevant documents shall contain the same units of weights and measurements as given in the Contract Documents, in respect to the following data:



- (a) Unit net weight
- (b) Unit gross weight (including packing)
- (c) Dimensions of packing

18.2. All weights and measurements recorded by the Project Management Consultants or Inspector(s) on receipt of the goods / stores / material(s) at the consignee's destination will be treated as final.

19. Packing & Marking

- 19.1. All goods / stores / material(s) shall be suitably packed in weatherproof packing for rail and / or road or other appropriate transport within India. The Supplier shall ensure that the packing is per the technical specifications as provided in the Section IV of the Tender Document and is strong enough to ensure safety and preservation of the goods / stores / material(s) up to the consignee's destination or other point of final destination. The Supplier will be required to make separate packages for each Consignee.
- 19.2. For uniform goods / stores / material(s) when packed in several cases / crates, progressive serial numbers shall be indicated on each end.
- 19.3. All nozzle holes and openings as also all delicate surfaces shall be carefully protected against damage and bad weather. Flange faces of all nozzles shall be protected by blanks. All manufactured surfaces shall be painted with rust proof paint or as specified in the technical specifications.
- 19.4. All small pieces shall be packed in cases. All fragile and exposed parts will be packed with care and packages will bear the words "HANDLE WITH CARE" in English. Any other direction for handling shall also be clearly indicated on the package.
- 19.5. The Supplier shall be held liable for all damages or breakages to the goods / stores / material(s) due to defective or insufficient packing as well as for corrosion due to insufficient greasing /protection.
- 19.6. For every shipment, packages must be marked with serial progressive numbering. The numbering will be progressively continued for each subsequent shipment covering the Contract. All packages will bear warning signs on the outside denoting the center of gravity and sling marks. Top heavy containers will be marked either "TOP HEAVY" or "HEAVY ENDS".

20. Dispatch Instructions

Unless otherwise advised by GSDMA in writing, goods / stores / material(s) shall not be dispatched without prior inspection and / or testing and Release Order / Material(s) Acceptance Certificate issued by the Inspector(s).

21. Shipment & Shipment Notices

Upon delivery of the goods / stores / material(s), the supplier shall notify the purchaser and the insurance company by cable / telex / fax the full details of the shipment including contract number, railway receipt number and date, description of goods, quantity, name of the consignee etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:



- (i) Three (3) Copies of the Supplier invoice showing the following details
 - (a) No. & Date of Bills or Invoice.
 - (b) No. & Date of Purchase Order.
 - (c) Name & Specification of Item.
 - (d) Name of Manufacturer & Model / Make /Brand
 - (e) Quantity
 - (f) Unit Price and
 - (g) Total cost
- (ii) Railway receipt/acknowledgment of receipt of goods from the consignee(s);
- (iii) Three (3) Copies of packing list identifying the contents of each package;
- (iv) Insurance Certificate;
- (v) Manufacturer's / Supplier's warranty certificate;
- (vi) Inspection Certificate issued by the Inspector(s), and the Supplier's factory inspection report; and
- (vii) Certificate of Origin.

The above documents shall be received by the Purchaser before arrival of the goods / stores / material(s) (except where the goods / stores / material(s) have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

22. Insurance

- 22.1. The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in Clause 22.2.
- 22.2. For delivery of goods / stores / material(s) at site, the insurance shall be obtained by the Supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes.
- 22.3. In the event of breakages or loss of stores during transit against purchase order the said quantity will have to be replaced by the supplier. The purchaser will not pay separately for transit insurance and the supplier will be responsible for the goods / stores / material(s) as soon as possible, but not later than 15 days from the date of arrival of stores at destinations notify the supplier of any loss or damages to the goods / stores / material(s) that might / should have occurred during the transit.

23. Termination

- 23.1. Without prejudice to GSDMA's right to price adjustment by way of discount or any other right or remedy available to GSDMA, GSDMA may terminate the Contract or any part thereof by a written notice to the Supplier, if:
 - (i) The Supplier fails to comply with any material term of the Contract.
 - (ii) The Supplier informs GSDMA of its inability to deliver the goods / stores / material(s) or any part thereof within the stipulated delivery period or such inability otherwise becomes apparent.



- (iii) The Supplier fails to deliver the goods / stores / material(s) or any part thereof within the stipulated delivery period and / or to replace / rectify any rejected or defective goods / stores / material(s) promptly.
- (iv) The Supplier becomes bankrupt or goes into liquidation.
- (v) The Supplier has misrepresented to GSDMA, acting on which misrepresentation GSDMA has placed the Purchase Order on the Supplier.
- (vi) The Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this Clause:

“corrupt practice” means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and

“fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.

- 23.2. Upon receipt of said termination notice, the Supplier shall discontinue the work on the Contract so far as terminated, and matters connected therewith.
- 23.3. On termination of the Contract, without prejudice to any other right or remedy available to GSDMA under the contract, in the event of GSDMA suffering any loss on account of delayed delivery or non-delivery, GSDMA reserves the right to claim and recover damages from the Supplier in respect thereof.
- 23.4. Notwithstanding anything to the contrary herein contained, GSDMA will be at liberty to take independent administrative and /or legal action against the Supplier for delay or non-performance of its contractual obligations or any of them.

24. Technical Information / Confidentiality

- 24.1. The Supplier shall not, without the GSDMA'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 GSDMA 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.
- 24.2. The Supplier shall not, without the GSDMA's prior written consent, make use of any document or information enumerated in Clause 24.1 except for purposes of performing the Contract.
- 24.3. Any document, other than the Contract itself, enumerated in Clause 24.1 shall remain the property of the GSDMA and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the GSDMA.



25. Settlement of Disputes

- 25.1. GSDMA 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.
- 25.2. If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either GSDMA or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.
- (a) Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the goods / stores / material(s) under the Contract.
- (b) Arbitration proceedings shall be conducted in accordance with the rules of procedure as stated below:
- (a) In case of Dispute or difference arising between GSDMA and the Supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by GSDMA and the Supplier. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the presiding arbitrator shall be appointed by the President of the Institution of Engineers(India)
- (b) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) above, within thirty (30) days after receipt of the notice of the appointment of its arbitrator by the other party, then the President of the Institution of Engineers (India), shall appoint the arbitrator. A certified copy of the order of the President of the Institution of Engineers (India), making such an appointment shall be furnished to each of the parties.
- (c) Arbitration proceedings shall be held at Gandhinagar, Gujarat, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- (d) The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself.
- (e) Where the value of the contract is Rs. 10 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority namely the President of the Institution of Engineers (India).
- 25.3. Notwithstanding any reference to arbitration herein,
- (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and



(b) GSDMA shall pay the Supplier any monies due to the Supplier.

26. Limitation of Liability

Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause 15,

- (a) the Supplier shall not be liable to the GSDMA, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the GSDMA; and
- (b) The aggregate liability of the Supplier to GSDMA, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

27. Governing Language

The contract shall be written in English language. Subject to Clause 27, English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

28. Applicable Law

The Contract shall be interpreted in accordance with the laws of the Union of India.

29. Notices

- 29.1. Any notice given by one party to the other pursuant to this Contract shall be sent to other party in writing or by cable, telex or facsimile and confirmed in writing to the other Party's physical addresses.
- 29.2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

30. Standard Breach Clause

The CEO, GSDMA shall, in addition to his powers under other clauses to terminate the contract, have powers to terminate his liability there under of the time by giving one month's (or such shorter period as may be mutually agreed) notice in writing to the Supplier of his desire to do so and upon expiry of the notice, the contract shall be terminated without prejudice to the right accrued to the date of the termination. However, if the Government decided to put an end to the business relations on breach of any conditions of the contract, no such notice shall be necessary and on event of Government decided to put an end to the business relations on breach of any conditions of the contract, no such notice shall be necessary and on event of Government deciding to terminate the business, and the Supplier shall stand terminated with immediate effect.



SECTION - III
QUALIFICATION CRITERIA

The bidders fulfilling the following criteria may apply:

The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement(s):

- (i) The bidders should be a manufacturer or authorized dealer, who have supplied/ designed, manufactured, tested the equipments similar to the type specified in the 'Technical Specification' up-to at least 50% of the quantity required for the lot and supplied in a single contract, in any of the last five (5) financial years and the Bidder should have experience of one similar successfully completed works costing not less than the amount equal to 40% of the estimated cost during the last 5 years ending last day of the month previous to the one in which applications are invited. The bidders are also required to submit the performance certificate of the contracts executed.
- (ii) All equipment should have as per BIS (Bureau of Indian Standards) or any international standards, which is equivalent or higher than the BIS certification for quality assurance
- (iii) Further, bidder should be in continuous business of manufacturing / supplying and after sale services of products similar to tendered item during the last 5 years prior to bid opening.
- (iv) In case the bidders is quoting as authorized representative of a manufacturer, meeting with the above requirements in full, he can be considered provided the manufacturer furnishes authorization as per Performa in Annexure VII.
 - Authorized Dealer should have Manufacturer's Authorization letter (as per Annexure VII) to quote in this Tender and Manufacturer to give all Technical & Commercial support and Warranty and After Sales Services.
 - The Authorized Dealer should have valid Agreement with the Manufacturer and also should have Authorization from the Manufacturer effective from at least one year prior to the due date of this tender.
- (v) The Bidder shall furnish documentary evidence that it meets the financial requirement(s) i.e. Total turnover of the bidder shall be not less than INR 8,00,00,000/- (INR eight crore only) each year during the last three (3) financial years.

For the purpose

The period of “**last three financial years**” shall be from 01.04.2017 to 31.03.2020 and “**last five financial years**” shall be from 01.04.2015 to 31.03.2020



SECTION - IV TECHNICAL SPECIFICATIONS

(Schedule-1) Mist Fire Tender (Multi Purpose) with Robot

General: The vehicle shall be manufactured & supplied strictly as per specifications given below. The chassis shall be 300 hp fully automatic with torque converter. It shall be designed to carry 5000 Liters. of water, a pump of 400 LPM@150Bar, etc. All equipments will be fixed in an ergonomic manner, readily accessible during emergencies. Drag hooks or eyes of adequate strength and design will be provided at the front and rear of chassis.

Bodywork: Enclosed accommodation for driver, officer in charge & 4 crew members would be provided in an extended cabin as per the below given specs:

Cabin: The original cabin of chassis manufacturer shall be extended to accommodate total six crew members, strictly as per guidelines of chassis manufacturer. Authorization of chassis manufacturer shall be enclosed with offer. In case it is not possible to do extension, a separate cabin shall be built behind the original cabin with a large opening between two cabins. This opening shall be of full width and height of partition being removed. It should be possible for firemen to pass through from the front cabin to the rear without the need to get down from the vehicle through this opening. The cabin would be internally lined with FRP molded panels as per latest international trends. These shall have a speckled finish and shall be fully washable. Due care shall be taken to ensure that the fabrication is of the highest order & in no case shall it compromise on the function or the aesthetics of modern day cabins. The crew cabin shall be provided with anti skid matting and a 10 person first aid box. The doors of the driver cabin shall have power windows. Driver will be provided with large rear view mirrors on both sides & convex mirrors for overall view from top to bottom & left to right.

Structure and Paneling: The complete rear structure of shall be done from 2mm CRC steel tubes / sections angles channels etc. Angles, channels wherever used will be of minimum 3mm (excluding the main long runners, which shall be of min. 4 mm), and shall be treated for corrosion resistance by hot-dip galvanizing and epoxy coating. The outer paneling shall be done from 3mm aluminum sheets & internal paneling will be done from 2mm aluminum sheets. The complete top of the rear superstructure shall be covered with 3 mm aluminum sheets treated for anti slippage or with 3 mm aluminum chequered plates. The complete paneling (internal, external as well as the roof top shall be done from marine grade aluminum sheets only. The details of the same shall be submitted along with the offer. The doors will be fitted with safety glasses with power windows. Sheets of the outer panels will be completely glued to framework. Riveting/bolting/screws of any kind shall not be permitted.

Seating: The driver's & officer's seat will be provided with chassis. The crew seat shall have individual seating for the crew, fitted with brackets for placement of Breathing Apparatus in an upright position. These shall be of wear & walk away type so that when the crew disembarks from the vehicle the BA sets should easily come off the seats with them. The seat bottom will be theater type, which will automatically flip up when the fireman gets up, thereby freeing up the space for easy embarking & disembarking. The seats shall have integrated seat springs to isolate shock while in motion. They shall have a fixed type, seat-back to improve rider comfort and an auto-pivot and return headrest for rapid seat egress. The seats shall accommodate all types of SCBA and shall have a right shoulder seat belt release and a chrome swivel bezel. The seats shall be of HO Bostrom (Tanker 450 ABTS), Seats Inc (Battalion ABTS) or equivalent make only. Details of the seats shall be submitted along with the bid.

Lockers: Suitable lockers will be provided for storage of equipments & accessories listed elsewhere in these specifications. Size and number of locker shall be such that they accommodate all the equipment / accessories in an easily accessible manner. These lockers shall be fitted with MCD make roller shutters (min. 5 shutters, two on each side and one at the rear) shall be installed. These shutters shall be rolled inwards under roof giving unobstructed access to equipment. Roller shutters shall be inter-connected with plastic profiles, sealing them watertight when closed.



They shall be durable, maintenance free, weather & corrosion resistant & capable of opening in every position of the vehicle even in rough terrain & on slopes. The sections shall be powder-coated / anodized to a smooth finish & aesthetic look. The shutters shall have an OEM locking mechanism. A master switch for isolating the locker lighting (fully LED based) shall be fitted in driver's cabin. The complete shutter assembly including LED lighting, side/bottom/main profiles, as well as the complete locking system, shall be from the shutter manufacturer only.

Stowage Of Equipments: For all loose fittings, quick release couplings or snap clamps of spring steel (as per manufacturers standards) will be provided, which shall enable the operator to locate the desired equipment instantly and save valuable time. Fittings shall ensure that none of the items move & damage internal paneling. Suitable straps / brackets will be provided for all other items.

Water Tank: The Water tank shall be of minimum 5000 Liters. capacity fabricated from MS plates of min. 5mm thickness all around except the top and baffle plates which shall be of 4mm. It shall be of welded construction & die-pressed on all sides to prevent distortion & ensure torsional rigidity. Due care should be taken to ensure that butt-welds are minimized. Welding shall be done using MIG welding only. Tank will be baffled & the baffle plates shall be bolted type, easily removable and all fasteners shall be of SS. The mounting of the tank shall permit full contents to flow to pump. Bottom of tank shall be sloped towards pump. Suitable hooks / lifting eyes shall be provided on top of the tank to enable it to be lifted for maintenance/repairs. All sides shall be die-pressed. The tank shall have a filling orifice of 250mm & a maintenance manhole of 450mm. The cover shall be marked "WATER". One more filling connection will be provided terminating in 63mm male instantaneous couplings with strainer and ball valve for filling. A 50mm diameter drain line and a cleaning hole of 250mm will be provided at the bottom of the tank. The connection shall ensure that water is discharged away from the wheels. One overflow pipe shall be provided. An electronic LED based level indicator will be provided at control panel. Additionally a clear acrylic type level will be provided as standby. The tank will be connected to the pump through a suction line fitted with three filters. Screwed bends shall be avoided and all joints will be flanged with 'O' rings.

High Pressure Pump: The pump shall be of 400 LPM@150 bar. It shall be a positive displacement pump, working to its capacity between 1000-1500 RPM. A bypass for letting water back into the tank shall be provided, which shall release excess pressure generated when hand lines are shut or when discharging lower outputs. The pump shall have double seal on each plunger with low pressure inter-mediate chamber, synthesized pistons of solid ceramic and connecting rods of an alloy with low attrition coefficient, high wear resistance & high anti-seize properties. The pump shall deliver water to the hose reel/s fitted on the vehicle and to the monitor fitted at the top. ***It shall be suitable for charged water with particles of up to 200 microns (20% concentration) and capable of running dry without damage for at least 30 minutes.*** The details showing the dry running capability shall be submitted along with the offer. The pump shall not consume more than 160 hp & shall not weigh more than 410 kg. It shall have symmetrical power end design with top and bottom mounting holes. It shall have a low-high pressure packing design with integrated cooling. It shall have vertically arranged suction / delivery valves with splash lubrication and an external gear box. The pump body shall be of cast iron and manifold shall be nickel treated cast iron. It shall have roller rim shaft bearings, forged steel connecting rods and antifriction bearings. The crankshaft shall be made of nitrided, hardened and tempered alloy steel. The pump shall have light alloy piston guides, which shall be nickel treated, solid ceramic plungers and stainless steel valves.

UHP Monitor: The monitor shall be fully remote controlled, of 400 LPM capacity, fitted at a suitable location on top of the vehicle, so as to allow easy control by an operator. It shall be constructed from SS and shall have a veined waterway to produce the least friction loss. It shall be constructed with thrust rods and thrust bearings on both horizontal and vertical rotational joints for improved product longevity. It shall have two, sealed gear motors that shall allow simultaneous vertical and horizontal adjustments. The monitor shall have continuous 350 degree horizontal rotation and a -90 degree to +100 degree vertical movement from the horizontal. The motors shall have manual override for use in the event of power failure. Electric controls shall allow for programmable horizontal center position, horizontal stops, stow position, blackout zones, and motor speeds for fast or slow movement.



The electric control shall allow for horizontal and vertical automatic oscillation, shall be radio frequency compatible, and shall be compatible with both 12VDC and 24VDC power supply. A controller shall be provided with the monitor of fixed joystick type fitted either in the cabin or at the rear control panel. The min. range of the remote controller shall be 100 Mtrs. The nozzle should automatically adjust to maintain the effective stream and maximum reach, at variable flows. The throw of the monitor shall not be less than 35 Mtrs. Electric motors and connectors shall be completely sealed, with manual overrides. The monitor shall have a guarantee of min. five years against corrosion. Monitor shall be of Akron / Rosenbauer / Elkhart Brass or equivalent make only.

Main Hose Reel: There shall be an electrically operated hose reel of approximately 500 Meters length. It shall be provided at a suitable location on the vehicle. The hose shall be rated to handle the pump pressure of 150 bar and shall be selected accordingly. The min. diameter of the hose shall be 38mm which shall allow sufficient flow to the high pressure guns & reduce frictional resistance. The reel shall be fully electrical in operation, and shall be adapted for the voltage available on the vehicle. At the discharge end of the reel, a splitter module shall be provided that will divide the reel's flow into five parts. Each part will then be connected to separate portable hose reels, fitted on the vehicle.

Portable Hose Reels: Five portable hose reels shall be provided each of 30 meter and fitted at a suitable location on the vehicle so that they can be easily removed and used as required. These shall be manually operated reels and shall have a carrying handle for easy portability. The hose reels shall be fitted in such a way that they are quickly released and carried away. One high-pressure fog gun will be fitted at the end of each reel (total 5 guns shall be supplied) which shall be capable of discharging minimum 75 LPM@100 bar in jet/fog pattern. The jet range will not be less than 25 Mtrs. & the fog shall be minimum 20Mtrs.

Fire Fighting Robot: Fire-fighting robot shall consist of min 6 Wheels, including 4 Nos. of sprocket wheels on track and 2 front tyres or all six on track, water monitor, drive system, remote controller with screen display, wireless transmitter etc. The dimensions of the Robot shall not be more than 1600 X1200X1300mm without antenna. The Overall weight of the complete Robot shall not exceed 500 kgs. The Robot shall comply with the machine directives 2006/42/EC and electromagnetic compatibility directives 2014/30/EU and shall be CE. The Robot shall be splash waterproof including electrical system - minimum IP 54. The drive system of the robot shall be electrical drive provided by rechargeable batteries. Battery has to be only VRLASMF Battery. The robot shall be able to perform in the temperature range from - 10° C to + 60° C and relative humidity of 90%. It should be able to tow a vehicle of weight of at least 2.5 ton GVW. The design should be 6 Wheel Drive type for better power distribution and control, in which all the wheels shall be with "All Terrain tyres". All wheel suspension system shall be provided for the wheels which will assist in crossing high barriers while maintaining a low centre of gravity. The robot shall have ability to move in different terrains like grass, potholes, continuous hump, paved or unpaved road etc. and shall meet fire-fighting requirement of the rapidly changing fire ground environment. The robot shall drag the full range of long fire hoses. The robot chassis shall have good dynamic performance, load capacity. The robot can bear the uniform load up to 200 kg, should be capable of climbing up to 30 degrees slope, and min. 25 cm vertical obstacle. The robot shall be provided with water proof video camera and Thermal imaging camera for surveillance and fire fighting in remote places. Images shall be transmitted to the controller to the display. The robot shall be powered by rechargeable batteries and driven By DC motor. The material used for the total structure and body of the Robot shall be stainless steel grade SS 304 only. The robot shall be able to climb the stairs and cross ditches. The ground clearance shall be minimum 150 mm and gradeability of 30 degrees slope. The minimum speed of robot shall be minimum 2.5 Km/Hr. Synchronous lamp shall be provided for water monitor of suitable wattage. Working duration shall be minimum 3 to 4 hours. The robot should be provided with automatic cooling water mist protection system. Control Mode: Electronic wireless remote control having range of min. 100 Mtrs. A Water monitor capable of discharging min. 1800 LPM @ 10 bar shall be mounted on the Robot.



The monitor should be able to discharge water to a distance of not less than 50 m at full pressure. The material of monitor should be Stainless Steel/ Bronze only and nozzle shall be made of hardened S.S. The multi flow nozzle shall have the provision of changing the discharge pattern between Jet and Fog. 2X63 mm male instantaneous BIS water inlet couplings will be provided at the rear of the Robot to connect fire hoses. Wireless Controller: Remote controller with screen display. Thermal Imaging camera mounted at suitable location with wireless Transmitter to send images on screen of wireless controller. The robot shall meet min. IP 54 protection class. The Robot shall be painted in Red colour or buffed shine with designer finishing or as per client requirements.

Cooling System: In addition to the radiator cooling, an indirect cooling system of the open circuit type shall be provided (if required), to keep the engine from overheating during extended use in tropical climates & when the ambient temperature is over 40° C. The cooling system should be so designed that the full power output of the engine can be maintained during continuous stationary running without overheating. The operating temperature of the engine cooling water shall be thermostatically controlled. Cooling water pipe from P.T.O. & cooling tank shall be connected through a suitable diameter pipe.

PTO Unit: Suitable gearbox mounted PTO / auxiliary PTO shall be installed for operating the UHP system/pump and hydraulic/electrical hose reel. It shall be of a proper ratio to drive the pump at the required RPM without any loss of power & prevent the engine from overheating. Details of the PTO shall be submitted along with the bid.

Piping & Valves: Complete pipeline circuit on the vehicle including water lines & fittings will be of SS 316. All valves up to 2" size will be lever operated SS316 ball valves & all valves above 2" size shall be butterfly valves. Seats of the valves shall be easily replaceable. All socket welded lines shall be DP tested and all the butt welded joints shall be radio graphically tested. All the lines shall be tested hydraulically for at least 3 times the working pressure or 1.5 times the working pressure of the pump.

Electrical System: All the wiring will be properly fixed in position & will be protected against heat, oil & physical injury. To the extent possible all wiring will pass through conduits. All wires shall be stranded copper or copper alloy conductors of a gauge rated to carry at least 125 percent of the maximum current for which the circuit is protected. All electrical circuits will have their own separate fuses, suitably marked & grouped in a common fuse box, located in an easily accessible position. Provision will be made for min. 4 spare fuses in the box which shall be provided in driver's cabin. All controls will be provided near driver's seat & battery will be placed in an enclosed box. Arrangement shall be made on dashboard opposite the officers' seat to fix a Motorola wireless set of 25W capacity.

Light Mast: An NFPA compliant, low profile, roof mounted lighting system, fitted with IP 68 certified 4X230 Watt LED lights, vertically elevated to 4.5 Mtrs above roof, capable of taking power directly from the vehicle (with no need of a genset), shall be supplied. Lights shall be rated for 80,000 lumens, life span of 50,000 hours. Lights shall have flood as well as spot combination patterns. Mast shall have dual tilt remote control positioner with rotation & tilt to provide total coverage. In addition there shall be a one button command to automatically retract the mast, turn out the lights & stow the system into transport position. The mast shall be made from aluminum 6061-T6 extruded profiles, with a base diameter of minimum 125mm. It will have tilt as well as pan angles of not less than 350 degrees, full extension from transport not exceeding 60 seconds, wind speed handling of 100 Kmph & an integrated saddle installation. A look up light will be integrated into the mast & all wiring right up to the lights as well as RCP will be internal. External wires shall not be accepted anywhere. The light mast shall be shock & vibration certified as per SAEJ1455 & MIL-STD-810G & hand held remote shall comprise of a glove friendly, impact resistant & water proof pistol grip design. The remote shall have a message display showing all functions of mast as well as error messages for trouble shooting. Weight of the system shall not exceed 70Kgs. Mast shall be of Willburt, Nightscan, Rosenbauer, Fedral Signal, Teklite, Brimotor, make only.



Ladder Gantry: The vehicle shall be fitted with a single tier ladder beam gantry (motorized with remote control) fitted on the vehicle roof. The ladder beam gantry shall be suitable for fixing 10.5mtr trussed type extension ladder, used in fire brigade. The beam gantry system shall allow slipping & loading of the ladders entirely from the ground level without the need for climbing on to the deck of the truck. The beam gantry shall be permanently attached to the truck & shall balance & pivot at predetermined points to allow the ladder to be cantilevered & tilted towards the ground when the ladder can be removed from the beam & go to work from ground level. The beam gantry shall house automatically using a safety latch. The beam & slide mechanism shall be made of aluminum & use solid bearing technology. The beam shall be attached with a “T” shaped handling bar which allows a fire fighter to grasp & draw back the main beam & ladder to a point where it counter balances & can be placed on ground for taking away the ladder. The automatic safety catch fitted at the base of the beam shall secure the beam from moving when it is housed in the vehicle & when the vehicle is moving. The aluminum extension ladder (CE marked) shall be supplied along with beam gantry suitable for fixing in the gantry.

Instruments & Controls: Adequately illuminated pump control panel will be provided on the appliance. The following controls & gauges will be provided at this control:

1. Auxiliary throttle control
2. Pump pressure gauge
3. RPM Meter
4. Light mast controls
5. Panel light
6. Plastic tube type level gauge
7. Pressure regulator

Fittings & Accessories: Following accessories shall be provided on the appliance:

- a) Two Spot lights in front (Hella make)
- b) Two Fog lamps (Hella make)
- c) Four Blinker type traffic indicators (OEM supplied).
- d) Grand LED Light bar with hooter amplifier & speakers.

Equipment: The equipment to be supplied on the appliance will be as per list attached below:

Sr.	Description	Qty.
1.	Extension Ladder 10.5 Meters (trussed type) one unit	1 No.
2.	DCP fire extinguisher (6 kg) one unit	2 No.
3.	Large Axe (as per IS 703) one unit	2 No.
4.	Crow Bar (as per IS 704) one unit	2 No.
5.	Sledge Hammer (as per IS 841 five pound) one unit	2 No.
6.	16 mm dia PP ropes of 30 meters length each.	3 No.
7.	Shock resistant gloves (full size) six pairs	3 No.
8.	Positive Pressure B.A. Set with Carbon Composite 2000 Litre Cylinder (Each set with spare cylinder) 4 units	6 Nos.



Workmanship & Finish: The GVW of appliance will not exceed the rated GVW of the chassis manufacturer with all equipments & crew. The weight distribution diagram should be submitted along with the offer failing which the offer is liable for rejection.

Painting & Marking: The entire structure will be prepared by grinding the welded surfaces, priming the finished material with a zinc rich primer & then finally coated with a two pack epoxy based paint. Once paneling is completed, outside surfaces shall be surface treated & painted with good quality paint, like Du-Pont, PPG, Standox, polyurethane (PU) based with a life of 10 years. Bidder shall guarantee fade resistance of minimum 5 years from date of supply.

Vehicle Exterior Paint: The complete vehicle (all exterior surfaces) and monitor should be painted with at least 2 coats of zinc phosphate epoxy primer each of 50 microns DFT and two coats of polyurethane finish paint each coat of 50 microns DFT. Further improvement on the paint may be carried out by the manufacturer beyond that mentioned above, to give better protection & surface finish. User name will be written on both-sides with yellow color. Paint shall be guaranteed against fading for at least 5 years.

Reflective stripes: Reflective stripe(s) shall be affixed to the perimeter of the apparatus. The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total width and shall conform to the minimum requirements of ASTM D 4956, Standard Specification for Retro reflective Sheeting for Traffic Control, Type I, Class 1 or Class 3. At least 50 percent of the cab and body length on each side, at least 50 percent of the width of the rear, and at least 25 percent of the width of the front of the apparatus shall have the reflective material affixed to it.

Owner's emblem: Owner's emblem in original colour together with name shall be written in golden yellow / reflective white stickers / paint on both sides of the vehicle. Visual graphics (if any) will also be discussed with the vendor at the time of final inspection & accordingly carried out before dispatch.

Other Miscellaneous Works: The inside of lockers shall be painted in pale cream / grey color. Under body shall be painted with chlorinated rubber paint. Appliance shall clearly have the following marks:

1. Manufacturer's name & trade mark.
2. Year of manufacture
3. Pump serial numbers and capacities.
4. Capacity of water tank and foam compound tank in liters.
5. Engine and chassis number.
6. All instrument control & valves shall be identified with properly itched metallic Name plates.

Acceptance Tests: The acceptance tests as mentioned below will be given to complete satisfaction of inspecting officers. Vendor shall ensure that design of tender will not affect chassis parameters such as speed, turning circle, acceleration etc. All inspections & tests shall be carried out by the vendor to the complete satisfaction of client's representative, who shall have access at all reasonable times to vendor's works. All testing parameters should be carried out at manufacturer's premises & details of infrastructure shall be provided with bid failing which the offer shall be rejected.

Stability: Stability of appliance will be such that when fully equipped & laden, if the surface on which the appliance stands is tilted to either side at an angle of 27° from horizontal it will not overturn.

Gradient: The vehicle will be tested on a gradient test ramp at an angle of 1:4. as per BIS.

Endurance Test: Pump will be tested for continuous four hours, water will not be replenished & engine will not show signs of overheating.



Road Test: After completion of all the above mentioned tests, a road test will be carried out where the vehicle will be tested as per the parameters laid down by the BIS. The braking, acceleration & top speed tests will be checked & recorded by the inspecting officers.

Performance Guarantee: The manufacturer shall guarantee the design, material, workmanship and the performance of the complete unit for a period of 12 months from the date of supply of completed vehicle. Any mechanical defect, faulty workmanship or operational defects found during this period shall be rectified by the vendor at owner's premises within reasonable time without any extra cost.

Training: After supply of vehicle, vendor shall provide one week training on operation & maintenance of fire vehicle including chassis at owner's site. Additional one week free training will be given at owner's site within warranty period. **Charges for the training shall be included in the bid.**



(Schedule- 2) COMMAND VEHICLE

Technical Specifications:

- Scorpio 4x4 - BSVI.
- Company provided dark RED colour.
- Slim LED light bar (Red-Blue-White)
- 60 Watt 2 tone hooter with amplifier and PA system.
- Heavy duty front and rear bumper.
- Battery operated front bumper mounted winch (2 tone capacity)
- Thermal Imaging Camera (2units)
- Positive pressure breathing apparatus with carbon composite cylinders. (2units)
- Hooligan tool (1 unit)
- Battery operated positive pressure ventilator. (27 inch dia) 1 hour operating duration.
Back pack adaptable (the thrust of impeller 11.75 kg., 2.4 H.p., not more than 4200 rpm).
- Loud hailer (1 unit).



(Schedule- 3) PICKUP JEEP/ VAN

Technical Specifications:

- Bolero Camper type - dual Cab – 4x4 – BS VI.
- Fire RED colour.
- Slim LED light bar (Red-Blue-White)
- 60 Watt 2 tone hooter with amplifier and PA system.
- Heavy duty front and rear bumper.
- Heavy duty towing hook on rear bumper.

**(Schedule- 4) Hydraulic Fire Fighting Arm with five articulating section 55 meters****Technical Specifications:****1. General:**

The Multi Articulating Water Tower 55M is an aerial fire-fighting vehicle has been designed for effective fire fighting in high rise buildings, industrial areas, etc on fire. The EWT design includes articulated boom assembly, articulated waterway and water monitor and it can be used for putting out general fire and oil fire.

2. Safety Working Scope:**3. Main Operating Data:**

○ Max. working height (with monitor)	55m
○ Max. working reach below the ground level	Not Less than 37.5m
○ Working Rotation	360° continuous rotation
○ Transport height	Not more than 4,000mm
○ Transport length	Not more than 14,500mm
○ Transport width	Not more than 2,500mm
○ Gross vehicle weight (EWT55A)	Not more than 42,000kgs

4. Chassis

a. Model :	Volvo/Mercedes
b. Vehicle type :	BS -VI, Right Hand Drive
c. Drive train :	10x4
d. Cab :	Single, CP14L
e. Engine power :	Not less than 500 hp
f. Permitted total weight :	Less than 51 ton
g. Intake / Exhaust System :	Air intake / Exhaust outlet direction backwards
h. Gearbox :	Automatic

1. Bodywork and stowage**1.1 Driver's cabin**

Forward control type, hydraulically operated tilting driver cab for a crew of two (1 driver plus 1 fireman). The cab has an all-steel construction with adequate insulation against noise, vibration and extreme temperature and humidity.

1.2 Compartment

There are two compartments for keeping fire fighter's equipment or accessories in the body.



One of compartments is arranged on the left and another is on the right side. Each compartment has a hinged and lockable door.

In one of the compartments, MBC block for boom control system and combination box for electric system are installed.

1.3 Outrigger

2 Front and rear outriggers are installed in the left and right sides. Front outrigger is an X- extension type and rear outrigger is a swing type. Outrigger control panels are equipped in both side of the vehicle.

1.4 Mid-ship-mounted pedestal and boom

Pedestal and boom assembly are mounted in the middle of the vehicle.

1.5 Step

Step is to be installed to access onto the deck.

1.6 Deck

Deck is designed for anti slipping.

2. Booms

The Booms consist of a roll & zigzag folding type five section booms and provide better flexibility and easier access to the fire target through obstacles rather than using telescopic type of boom. All articulated booms except the first boom are vertically moving up to 90° and especially the fifth boom with vertical movement angle of 220°. Especially, its maximum horizontal outreach to the tip of water monitor is approx. 51.6 meters and the maximum working reach to the tip of water monitor below ground level is approx. 37.5 meters. The booms are able to be continuously rotated 360°. All booms are primed internally and externally and painted for long life span. The Booms are hydraulically driven and are welded by unique welding method to provide high durability and extreme accuracy. High tensile strength steels are used as load bearing structure for high strength and minimum flexing of the booms sections and the material of the boom is STE690 (equivalent to ATOS80) or much stronger steel.

2.1 Performance

Max. working height (to water monitor)	55m
Max. horizontal working outreach	51.6m
Max. working reach below ground level	37.5m
Max. standing angle of the 1st boom	90° (+/- 2°)
Max. extension angle of the 2nd & 3rd boom	180 ° (+/- 2°)
Max. extension angle of the 4th boom	235 ° (+/- 2°)
Max. extension angle of the 5th boom	220 ° (+/- 2°)



Rotation		360 ° continuous rotation
2.2 Dimension		
Each section length	1 st	Not less than 11,000mm
	2 nd	Not less than 8,450mm
	3 rd	Not less than 8,700mm
	4 th	Not less than 11,400mm
	5 th	Not less than 11,488mm
6.3 Cylinder		
1 st Boom cylinder		
Stroke		2,018mm
Rated pressure		350Kgf/cm ²
Proof pressure		450Kgf/c m ²
2 nd Boom cylinder		
Stroke		1,993mm
Rated pressure		300Kgf/cm ²
Proof pressure		450Kgf/c m ²
3 rd Boom cylinder		
Stroke		1,544mm
Rated pressure		350Kgf/cm ²
Proof pressure		450Kgf/c m ²
4 th Boom cylinder		
Stroke		1,444mm
Rated pressure		350Kgf/cm ²
Proof pressure		450Kgf/c m ²
5 th Boom cylinder		
Stroke		1,059mm
6.4 Boom Operation Control		
PLC (Programmable Logic Controller) and CAN (Controller Area Network) system are utilized for boom operation.		
All of boom operation is controlled by a cable remote controller and a wireless remote controller depending on user's convenience. Cable length of the remote controller is approximately 40 meters.		



Furthermore, the boom can be operated by the wireless remote controller within 100 meters if there is no wall or obstacle to block or disturb the frequency between the boom and controller.

Even though the end of boom is far away from the operator, the operator can operate the boom and see the target point to put out the fire at the screen through the camera installed at the end of the boom.

3. Rotation Ring Gear

Boom rotation is driven by ring gear and reducer that is engaged to it. Locking brake is installed in the reducer, which is activated when no hydraulic pressure coming in and prevents unintended ring gear rotation.

4. Stabilizing System

The stabilizing system consists of hydraulically powered outriggers mounted in their housings in the main frame. Each outrigger legs are fitted with self-aligning foot plate to spread the load evenly and to allow operation on uneven ground.

4.1 Front

outrigger

X-

extension

Driven by Hyd. cylinder

Max. Width (center to center) : 8,930mm (+/- 100mm)

4.2 Rear outrigger

Swing-support

Driven by Hyd. cylinder

Max. Width (center to center) : 11,900mm (+/- 100mm)

4.3 Outrigger Operation Control

All the outrigger operation is automatically controlled by a remote controller. 2 outrigger control panels are installed on the left and right side of the vehicle, and outrigger operation on the left & right side is manually controlled by the control panel on each side.

- Boom working radius is automatically adjusted to the extension range of each outrigger.

- Loading weight of each outrigger to the ground is shown on the remote controller screen.



- With only one touch on the switch, all outriggers can be automatically extended and leveled.
- Outriggers on the left and right side can be extended separately before leveling operation.
- All outriggers can be retracted together to the transport position only with one touch of switch.

5. Waterway

Waterway is connected from the fire pump to the water monitor installed at the end of the last boom. It is installed next to the boom and synchronized with the boom operation.

Its size is 4 inches and it is made of stainless steel STS304.

6. Electric water monitor & nozzle

6.1 Electric water monitor

The water monitor is installed at the end of the boom and can be moved up and down by a remote controller. It is also swiveled to both sides within the respective limit.

Model: Akron Brass Stream Master II 3480

Discharge rate: Approx. 3,000 l/min.

Vertical Travel : Up 90° / Down 45°

Horizontal Sweep : 45°

Stream pattern shall be variable from straight stream to full fog spray.

6.2 Nozzle

Model: Akron Brass Achromatic 5177

Flow capacity: 250 ~ 1,250 GPM

Electric Pattern Control

7. CCTV Camera & Camera Screen

7.1 CCTV Camera

A compact water-proof camera monitoring system comprises a normal color view installed on the top of the monitor. The camera has a hardened glass to prevent breakage, scratches and damage. The monitor and the camera's zoom, pan-tilt and rotation controllers are located at the controller locker for easy operation and viewing. This permits the bird-eye's view of the entire area of operation and it also allows the user to zoom into a point of interest.



10. Electric system

The electric supply is taken from the chassis battery which is kept charged when the engine is running.

Voltage of the system is 24V DC and all circuits have been fitted with their specific fuses.

10.1 Siren and public address system

Electric siren is installed in the vehicle. Control panel of the system is conveniently installed for the driver and a variety of sounds are available, i.e. fire fighting, ambulance, police, boat horn, etc.

10.2 LED light bar

Type: V-

type

Voltage:

DC24V

Color: Red

10.3 Reverse backing system

During reverse backing of the vehicle, it automatically works with warning sound

11. Safety Devices

All load bearing hydraulic cylinders is fitted with interlock valve directly integrated into the cylinder structure to prevent the booms or the outriggers from retracting in case of a pipe or hose failure.

An emergency stop switch is provided next to outrigger control levers and a remote controller to provide immediate and complete "freezing" of all systems in case of an unexpected emergency.

- Outrigger auto leveling & auto retraction to the transport position.
- Boom auto extension (to the memorized position) & auto retraction to the rest position.
- Obstacle sensor at the tip of end boom.
- Impact prevention function (boom & vehicle)
- Boom auto stop function when detecting fall over hazard
- Boom valve and outrigger valve driven by CAN (Controller Area Network)
- Display of outrigger & boom condition on the remote controller screen.



12. Backup System

- One standby pump is installed with engine for emergency operation.
- It consists of the hydraulic pump and engine.

12.1 Standby hydraulic pump

- Pump type : Piston pump
- Pump capacity : 6 cc/rev

12.2 Standby engine

- Model : Vanguard 21 Gross HP
- This engine is design-engineered to dependably take on the most demanding commercial applications. Energetic and quick starting, this powerhouse features a number of advanced technologies and integrated components that are proven to elevate the reliability standard, which helps hardworking people get a lot more done in less time

FEATURES	BENEFITS
Oil Gard Low Oil Shutdown System	Significantly reduces the chance of engine damage due to insufficient lubrication
Dura-Bore Cast Iron Cylinder Sleeve	Assures long engine life and improved oil control
V-Twin OHV Technology	Superior balance, low vibration, lower emissions, improved valve life, better fuel economy and higher HP/Weight
Cooler Cleaner Technology (efficient fan, improved debris management)	Efficiently reduces engine and oil temperatures by 25- 30 degrees while effectively managing airborne debris
Pressure Regulated Full Flow Oil Filtration	Keeps oil clean longer, extends time between oil changes and extends bearing life
Dual Clean Air Cleaner	Industrial Pleated paper with foam pre-cleaner for extended engine life
Mechanical Compression Release	Smooth easy starting, longer starter life and provides an instant return to maximum power
Lubrication	
Oil Drain	Convenient drain locations for trouble-free maintenance



Full Pressure Lubrication w/ Spin-On Oil Filter	Cleans oil and protects engine components to ensure maximum lubrication and long life
Centrally Located Oil Pump and Pickup	Faster priming and allows for a higher angle of operation
Oil Cooler	Reduces oil temperature, improves lubrication, and extends oil change intervals
Oil Dipstick	Provides easy access to check oil levels

Mechanical

FEATURES	BENEFITS
Modern Light Weight Pistons w/ Optimized Compliant Ring Package	Lowers noise, oil consumption, emissions and reduces wear
High Efficiency Head Design	Angled ports optimizes tumble and mixture preparation for improved efficiency, smoother idle, lower emissions and more power
Mechanical Governor	Improved speed control and more available power
Magnetron® Electronic Ignition	Quick dependable starts with no maintenance required
Simulated Dynamic Crankshaft Balance Techniques	Improves engine vibration
New Idle Down	Automatically lowers RPM when power not required. Results in lower fuel consumption and lower noise.

Sound

Poly-Core Blower Housing	Lowers noise level and improves sound quality
Phase Modulated Flywheel Fan	Lowers noise level and improves sound quality
Acoustically Contoured Crankcase	Lowers noise level and improves sound quality
Lo-Tone Muffler	Lowers noise level and improves sound quality

Gross Horsepower*	21
Engine Displacement (cc)	627 cc (38.26 cu in)
Number of Cylinders	Two
Engine Configuration	Horizontal



Bore	2.97in (75mm)
Stroke	2.76in (70mm)
Compression Ratio	8.4:1
Ignition System	Magnetron®
Lubrication System	Full Pressure w/ Spin On Oil Filter
Carburetor	Two Barrel Float Feed
Engine Cooling	Air
Engine Fuel	Gasoline or Gaseous
Governor	Mechanical
Cylinder Block	Aluminum Alloy with Dura-Bore Cast Iron Sleeve
Crankshaft	Ductile Iron
Starter	Rewind or Electric



(Schedule-5) Emergency Rescue Vehicle/Tender

Technical specifications:

General: The Emergency Rescue Tender shall conform to the specifications listed below & will be fabricated on a 18 Ton GVW, min. **BHP 150 ± 10 BHP Engine Permissible as BHP of suitable BS-VI compliance chassis is not known, approx. 4800-5000 mm wheelbase (4 X 2) BS-VI compliant or higher capacity chassis having full forward control, powered steering and fully Automatic transmission with torque converter.** The ERT shall be designed to effectively & efficiently carry all the equipment as per the following specifications, which shall be fixed in a compact & ergonomic manner & shall be readily accessible for use during emergencies. Due care should be taken to ensure that all aggregates are designed for comfort of the operator. The chassis shall be bought by the successful bidder on behalf of the Client. Payment for the chassis shall be done, as per terms and conditions specified in the tender documents.

Driver and Crew Cabin: Enclosed accommodation for driver, officer in charge & four crew members would be provided in a double compartment cab. Vendor shall get design approved from client before commencing fabrication. The floor of crew cabin shall be provided with good quality vinyl / rubber matting & a first aid box shall be fixed at a suitable location in the cab. The original cabin of chassis manufacturer shall be extended to accommodate the above mentioned six members & shall be as per the guidelines of chassis manufacturer. The complete cabin shall be duly treated for corrosion. In case it is not possible extend the cab for any reason, a separate cabin shall be built at the rear of the original cabin with a large opening between the two cabins. In this case structure & paneling shall be done as per guidelines for rear superstructure mentioned below. The cabin would be internally lined with good quality material, preferably pre-coated aluminum sheets. Alternatively other systems of interiors may be proposed, provided these shall be on par with latest international trends. Due care shall be taken to ensure that the design/fabrication is of highest order & in no case shall it compromise on the aesthetics of modern cabin interiors.

Seating: The officer & the 4 crew members at the rear shall be provided with individual seating fitted with brackets for placement of Breathing Apparatus in an upright position. All the seats shall be of wear & walk away type, so that when the crew disembarks from the vehicle the BA sets should easily come off the seats with them. The driver shall be provided with a BA cylinder which is securely mounted at the rear of the seat, with a readily deployable face mask. The seats for the rear crew shall have theatre type seat bottoms, which will automatically flip when they get up, thereby freeing up space for easy embarking & disembarking. All crew seats shall have integrated seat springs to isolate shock while in motion. They shall have a fixed type, seat-back recline, to improve rider comfort & an auto-pivot & return headrest for rapid seat egress. The seats shall have right



shoulder seat belt release & a swivel bezel & flip-up armrests. Seats shall be of HO Bostrom (model Tanker 450 ABTS) / Seats Inc. (Battalion SCBA Crew Flip Seat) or equivalent make only.

Structure & Panelling: The complete rear superstructure shall be from 2mm MS sections, tubes, flats or from corrosion free aluminum extrusion profile section framework constructed with bolt and nut system without welding work and paneled with aluminum plate by means of glue without any welding work. The Profiles shall be strong, solid all aluminum construction(ISO6063T6), light in weight and intrinsic rectangular design with a distortion insensitive bearing. All angles, channels in case of MS shall be of minimum 3mm. Outer panelling shall be of 3mm aluminium sheets & internal paneling shall be from 2mm aluminum sheets. The top of the rear superstructure shall be covered with aluminum sheets treated for anti-slippage or with 3mm chequered sheets. All exterior panels shall be glued to framework. Riveting/bolting shall be strictly avoided.

Lockers for stowage of equipment: All the lockers shall be designed as per the latest international standards / designs, with vertical & horizontal sliding drawers & folding partitions. The horizontal drawers shall be provided for the fitment of heavier equipment at the bottom of the locker & shall be of the roll in-roll out type with opening in tapered position giving very easy & immediate access to all equipment. The vertical slides shall be provided for fitment of lighter equipment & shall open in a straight line. The sliding mechanism shall be such, that it is easily operated by one hand. Along with the drawers & slides, there shall also be flap type folding partitions which are provided on the outer part of the locker & made in such a way that they occupy the least area while offering maximum space. All such equipment that cannot be accommodated in the drawers / slides due to size/weight constraints will be stored on these flap partitions. Behind these folding partitions, equipment shall be stored in easily removable bins, which will be provided with rollers underneath to facilitate easy movement. All equipment would be stowed very scientifically & systematically & each will have a designated location identified by printed graphics near their location. The colour printed identification will show exactly each item is located in that area. The drawers / slides shall be from aluminum material & flap partitions shall be from tubular steel material. All drawers / slides & partitions shall have self-locking systems to prevent accidental opening while vehicle is in motion.

Roller Shutters: For the easy operation of the Fire tender MCD make roller-shutters covering equipment lockers shall be installed on both sides. These shutters shall be rolled inwards underneath the roof giving unobstructed access to the equipment lockers & the equipment / accessories fitted in the vehicle. Roller shutters shall be made of hollow rectangular shaped aluminum links which will



be inter connected with the help of plastic / rubber profiles, sealing the roller shutter watertight when closed. They would be durable, weather & corrosion resistant & capable of opening in every position of the vehicle even in rough terrain. The sections of the shutter shall be powder-coated / anodized to a smooth finish & aesthetic look. The shutters shall have a locking mechanism (single key) to prevent accidental opening during movement of the vehicle. A master switch for isolating locker lighting circuit shall also be fitted in the driver's cabin. LED lights of min 1 Mtr. length, shall be provided on both sides of shutter (internal lighting) & in drip channel on top (external lighting). The lights shall be controlled by a magnetic switch which is embedded into the profile. The shutter shall be fitted with pull down straps. ***The shutters shall be fitted with an OEM central locking system.*** Complete shutter assembly including main horizontal sections, side, bottom & drip profiles, LED lighting, as well as the single key locking system shall be from shutter OEM only.

Mounting of Superstructure: Compartment Superstructure shall be mounted on secure brackets of the steel sub frame made from Anti-Corrosive Treated MS 4" section and shall be bolted with the chassis using the high tensile bolts. Use of "U" bolts as well as direct mounting of Superstructure on chassis frame is strictly non-permissible. The construction of the cabin shall be in a shape (design for which shall have to be approved before fabrication), which shall provide maximum vision for the driver. A light bar of 1000 mm long operated on 12/24 volt battery having 2 nos. red/yellow/blue lights, hooter and PA system with external 100W horn in built amplifier and a microphone shall be provided in front of officer's seat in the driver's cabin. The structural drawings of the superstructure and cab shall be submitted along with the tender for proper technical evaluation. The body of the whole vehicle shall generally be divided into 2 compartments. First shall be the Driver and crew cabin and second shall be for housing all the rescue equipment/aggregates.

Generator: A generator of min. 20 KVA shall be provided. Control panel shall have the following:

- a) 2 sockets (plugs) & switches with 3 phase connections.
- b) 4 sockets (plugs) & switches (MCB's) with single phase connections of min. 20 AMP capacity
- c) 4 sockets (plugs) & switches (MCB's) with single phase connections of min. 10 AMP capacity
- d) RPM Meter digital – 1 No.
- e) KW meter – 1 No.
- f) Ampere meter separate for each phase – 3 Nos.
- g) Frequency meter – 1 No.
- h) 32 Amps. TPN MCB – 1 No.
- i) 90 Mtr. 4 core of 80 x 20 round cable on reel – 1 No.
- j) 90 Mtr. 3 core of 80 x 20 size on cable on reel – 3 Nos.



Power Take Off: The P.T.O's for driving the generator shall be selected as per above requirements & shall be compatible with the auto transmission. Details of PTO's shall be submitted with offer.

Telescopic Light Mast: An NFPA compliant, low profile, roof mounted lighting system, fitted with IP 67 certified 4X230 Watt LED lights, vertically elevated to 4.5 Mtrs above roof, capable of taking power from vehicle directly, operating on 12 & 24 volts shall be supplied. Lights shall be rated for an output of 60,000 lumens, & have a life span of 50,000 hours. Lights shall have flood as well as spot combination light patterns. Mast shall have dual tilt remote control positioner with rotation & tilt to provide total coverage, & allow a person to accurately aim for directional positioning. In addition there shall be a one button command to automatically retract mast, turn out lights & stow the system into transport position. The mast shall be made from aluminum 6061-T6 extruded profiles, with a base diameter of minimum 125mm. It will have tilt as well as pan angles of not less than 350 degrees, full extension from transport position not exceeding 60 seconds, wind speed handling of 100 Kmph & an integrated saddle installation. The operation pressure shall not be higher than 20-25 psi. A look up light will be integrated into the mast & all wiring right up to the lights as well as RCP will be internal. External wires shall not be accepted anywhere. The light mast shall be shock & vibration certified as per SAEJ1455 & MIL-STD-810G & hand held remote shall comprise of a glove friendly, impact resistant & water proof pistol grip design, which is easy to handle. The remote shall have a message display showing all functions of mast as well as error messages for trouble shooting. In case of power failure, it shall be possible to stow the mast manually without any special equipment. Weight of the system shall not exceed 70Kgs. Mast shall be of Willburt, Nightscan, Rosenbauer, Fedral Signal, Teklite, Brimotor, or Command Light make only.

Electrical System: All wiring shall be properly fixed in position & shall be protected against heat, oil & physical injury. To the extent possible all wiring will pass through conduits. The wires shall be stranded copper of a gauge rated to carry at least 125 percent of the maximum current for which the circuit is designed / protected. Voltage drops in wiring from power source to using device shall not exceed 10%. All the electrical circuits will have their own separate fuses, suitably marked & grouped in a common fuse box, located in an easily accessible position. Provision shall be made for min. 4 spare fuses in the box which shall be provided in driver's cabin.

Under-body / Perimeter / Area Lighting: LED lights shall be installed under the cabin & body around the perimeter of the vehicle, in compliance with NFPA 1901. The lights shall be strategically placed to illuminate the immediate ground area around the vehicle. The under body lights shall be switchable from the cabin but also automatically activate when any of the cabin doors are opened. The remainder of the lights shall be switched on from the cab. There shall be one flashing red LED located in cab, within clear view of driver which shall be automatically illuminated whenever any passenger or body door is ajar, or if the telescoping light mast is not properly stowed. The light shall be marked "Do Not Move Apparatus When Light Is On" in compliance with NFPA 1901. There shall also be provided 5 LED lights at the highest level of the vehicle for area lighting in the vicinity of the vehicle. These shall be fitted at strategic locations on the sides (above shutters). Minimum one light shall be installed above each shutter. Blue strobe lights shall be provided (two on cabin). These shall be of the high intensity type with regular and intermittent flash pattern. Cover shall be molded as per body profile.



Ladder Beam Gantry System: The vehicle shall be fitted with a single tier ladder beam gantry on the vehicle roof. **The vehicle shall be installed with a Suitable Motorised gantry on the vehicle roof and shall be suitable for fixing a 10.5 Meters trusted Double extension – Simplex ladder.** The beam gantry system shall allow slipping & loading of the ladders entirely from the ground level without the need for climbing on to the deck of the truck. It shall be permanently attached to the truck & shall balance & pivot at predetermined points to allow the ladder to be cantilevered & tilted towards the ground when it can be removed from the beam & go to work from ground level. The beam gantry shall house automatically using a safety latch. The beam & slide mechanism shall be made of aluminium 6061-T6 alloy, & shall use solid bearing technology. The beam shall be attached with a “T” shaped handling bar which allows a fire fighter to grasp & draw back the main beam & ladder to a point where it counter balances & can be placed on ground for taking away the ladder. The automatic safety catch fitted at the base of the beam shall secure the beam from moving when it is housed in the vehicle & when the vehicle is moving. Additionally, the rubber and plastic parts used in the locking of the ladder to the gantry shall be of reputed make and shall be guaranteed by the OEM for minimum 10 years or 5,000 operating cycles. **The aluminium extension ladder (CE marked) 10.5 Mtr. trussed type Aluminium Double Extension ladder simplex (as per JCDD/10 standards) shall be supplied along with suitable motorised beam gantry, suitable for fixing in the same gantry.** The design of the beam gantry shall be such that the ladder can be released without difficulty from a reasonably accessible position. Means shall be provided for locking the ladder when stowed. The details of the Ladder and Beam Gantry, such as its make and model, supported with catalogues/brochures/drawings etc. should be attached with the offer. Bidder shall submit an OEM authorization failing which the bid may be rejected.

Electrically operated Winch: Electrically operated cable winch, of min. 6.5 tons pulling capacity shall be fitted. The winch unit should be complete with minimum 5.5 hp, 12v or 24v DC series wound electric reversible motor for increased pulling power. The motor & solenoids shall be grounded to the battery. It shall have an automatic load holding brake system for more strength. For free spooling the clutch design shall be easy to use type with spring loaded pull & rotate system. The gear system should be 3 stage planetary type for faster line speed & the gear reduction ratio shall not be more than 300:1, the rope drum shall not be of more than 8 inches dia & shall be supplied with minimum 90 ft heavy duty galvanized EIPS wire rope with replaceable self-locking clevis hook &



would be mounted on the front bumper of the vehicle with suitable strong supports & a 4 way roller fairlead. The Weight of the winch shall not be more than 55 kgs. Make shall be Ramsay, Rotzler, Sepson make only.

Light Bar & PA System: The LED Light Bar (Grand/Lumax/Polieye) shall be mounted on top of the driver cabin. The Bar shall have red/blue/yellow LED lights. All beacons shall sync with each other & provide seamless flash patterns. The LED shall be suitable for outdoor use. The PA system shall be of minimum three tones & min. 120 decibels. The PA system shall have an integrated mic with volume control. Mic shall have telephone cable so that it can be used from driver's and officer's side.

Accessories: The vehicle will be provided with the following accessories in addition to those normally fitted to the chassis. All the accessories will be suitably fixed in position or will be kept in lockers or other suitable place on the tender.

Fog lamps powered by the battery of the appliance	2
Adjustable Spot light	1
Portable inspection lamps	1

Equipment: (each vehicle shall have below mentioned Items. List of Rescue equipment is mentioned below. For detailed specifications of individual items, please refer to specifications given at Annexure **1 through 27**.)

SN	Description	Qty
1.	Self-Contained Breathing Apparatus sets each with spare cylinder	4 Sets
2.	Airline Trolley with four cylinders compatible to above BA sets	1 Set
3.	Gas Tight Encapsulated Chemical Suits as per specifications at Annexure 4	2 Nos.
4.	Non-Metallic Stoppers & Chemical Sealants as per specifications at Annexure 5	1 Set
5.	Hydraulic rescue tools Set as per specifications at Annexure 7	1 Set
6.	Set of Utility Tools (2 of each tool) as per specifications at Annexure 8	1 Set
7.	PPV 18 hp, min. 40,000 CFM and approx. 50 Kg weight	1 No.
8.	Under water SCBA sets as per specifications at Annexure 13	2 Nos.
9.	Forcible Entry Tool kit (PRT Kit) Paratech make	1 Set
10.	Rope Rescue Set with Foldable Stretcher, Spine Board & accessories	1 Set
11.	Bosch Demolition hammer 1750 Watts, 16 Kgs.	2 Nos.
12.	Oil and acid resistant gloves.	10 Pairs
13.	Safety goggles.	10 Pairs
14.	Fireman's safety belts	4 Nos.
15.	Punch for breaking windscreens and glass.	2 Nos.
16.	Traffic warning lamp, electronic flashing.	1 No.
17.	Hand held floodlights complete with a fixed charging device inside cabin.	2 Nos.
18.	10.5 Mtr. trussed type Aluminum Double Extension ladder simplex with suitable motorised beam gantry	1 No.
19.	Aluminum Hook ladder.	1 No.
20.	Shackle, 5 tons.	2 Nos.
21.	Shackle, 10 tons.	2 Nos.
22.	Collapsible stretcher with two steps.	1 No.
23.	Patient transport hammock.	1 No.
24.	LED 500 watt floodlight, with extendable tripod 2m	1 No.



25.	500 meter rolls of yellow and black barrier tape.	5 Nos.
26.	Crowbar, 700 mm	1 No.
27.	Crowbar, 1500 mm	1 No.
28.	Hammer, wooden handle, 5 kg.	2 Nos.
29.	Hammer, 3 kg reputed make	2 Nos.
30.	Sledge Hammer, 5 pound, with handle reputed make	2 Nos.
31.	Mallet 5 kg.	2 Nos.
32.	Wood axe.	2 Nos.
33.	Pick axe.	1 No.
34.	Axe large with insulation (33kv) of high carbon steel	2 Nos.
35.	Shovel, flat blade.	1 No.
36.	Shovel, scooped blade.	1 No.
37.	PP rope (60 Mtrs Length each)	1 No.
38.	PP rope (30 Mtrs Length each)	2 Nos.
39.	Evacuation Harness	2 Nos.
40.	Grapple with wire cable reputed make	2 Nos.
41.	Spades with handle reputed make	2 Nos.
42.	Rubber Mat 1 m x 1 m x 20 mm reputed make	1 No.
43.	Shears with large handle of 600 mm reputed make	2 Nos.
44.	Shears with small insulated handle of 400 mm reputed make	2 Nos.
45.	Multi Grab hook with wire cable for water rescue reputed make	2 Nos.
46.	Carpenter Tool kit reputed make	1 No.
47.	Electrical tool kit, complete, DIN 14885 or equivalent approved.	1 No.
48.	Gasoline drum, 10 liters.	2 Nos.
49.	Safety Net – 3 X 3 Mtrs.	1 No.
50.	Basket stretcher	2 Nos.
51.	Plastic chocks and blocks, for hydraulic tools	1 Set
52.	External battery charger reputed make	1 No.
53.	Hydraulic Jack (30T) reputed make	1 No.
54.	4 Ltrs. Clean Agent Fire Extinguisher	2 Nos.

ANNEXURE 1**SELF CONTAINED BREATHING APPARATUS**

Professional Self Contained positive pressure High Performance Compressed Air Breathing Apparatus with full Face Mask, SOLAS approved and EN 137 approved.

Carrying frame, shall be lightweight and resistant due to the presence of glass fiber, and shall be made of self-extinguishing synthetic resin and shall be designed to fit the shape of the body. On both sides of the back-pack, two comfortable carrying handles shall serve the purpose of lodging the medium and high-pressure hoses inside. The pressure reducer anchorage shall be designed to make the cylinder connection quick and easy. The lower part of the back-pack shall be with a rubber stiffening protecting the whole device and particularly the cylinder valve.

The harness shall be made of self-extinguishing synthetic woven fabric and carbon fiber. The buckles shall be metallic and self-extinguishing synthetic resin. The shoulder straps shall be padded and house the medium and high-pressure hoses thus protecting them from fire and abrasions. The rest of the hose through shall be protected by proper housing made out of the handles in the back-pack frame.

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The shoulder straps shall end with self-adjusting ribbon for a better donning and comfort. The belt shall be supplemented by a soft lumbar support discharging most of the device weight on the wearer's hips, whereas the shoulder straps shall have a stability purpose. The above configuration shall be ergonomic and minimize the wearer's strain.

Balanced type pressure reducer with reduced numbers of the moving components by 50% for reduced response time, a compact medium pressure cycle and total performance stability even in presence of second user. The pressure reducer shall allow a free airflow of over 1000 l/min.

The air hoses shall be connected to the pressure reducer casing by means of stainless steel swiveling couplings that allows easy movement and makes maintenance procedures extremely quick and easy. The pressure reducer shall be equipped with a high pressure connection to the pressure gauge, with a medium pressure connection to the demand valve and the audible warning device. The pressure reducer shall be equipped with a safety valve which can discharge all the air in excess in case of failure, according to EN 137 Norm.

It shall be equipped with a special audible warning device emitting a shrill warning tone which is activated by the air being discharged from the valve and shall be mounted on the Reducer Unit / or Pressure gauge on the left hand harness.

The pressure gauge shall be mounted on a pectoral support fixed to one of the harness straps in order to allow an easy reading of the pressure gauge itself. The audible warning device shall be positioned at a minimum distance from the ear in order to be better heard. The audible warning device is of the two-stage-type, i.e. activated by high pressure and operated by medium pressure. It shall be equipped with a device allowing the automatic testing of the correct functioning.

As long as the needle is below 55 bar, the audible warning device will whistle, while, when the needle rises above that value, the whistle will stop; the user shall not need to do anything else!

The demand valve shall be of the self-positive type, i.e. it shall keep itself in a standby position until the moment of the first breathing without wasting air, then at the first breathing act it shall be switch automatically to positive pressure. It shall ensure a positive pressure inside the mask up to 10 times the air consumption normally needed during use and shall be characterized by an extremely quick response time and mildness of functioning.

Complete with 6 litres 300 bar cylinder approved by Chief Controller of Explosive Nagpur. *Diablo with strict compliance to technical specifications*

ANNEXURE 2	<u>AIRLINE TROLLEY</u>
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Multipurpose airline belt manifold shall provide facility to connect to an air supply quickly and safely. The belt manifold should be provided with quick release coupling and pressure gauge from where the breathing hose shall connect to the breathing valve and full face mask. Battery of 4 nos. of cylinders each of 1800 liters (6 liters water capacity) with 300 bar pressure complete with cylinder valve and having CCE, Nagpur approval shall be provided. Each cylinder shall be connected to the manifold with a NRV and a flush valve. Hose reel of 45 meters length shall be mounted on the trolley. The **fully imported** pressure reducer should show cylinder pressure as well as line pressure and should be able to adjust the line pressure. One or two men shall be able to use it at a time with 'Y' connection (1 or 2 Spiromatic face mask with breathing valve can be coupled at a time). ***The equipment shall be connectable to the Breathing apparatus mentioned above.***

**ANNEXURE 4** **GAS TIGHT ENCAPSULATED CHEMICAL SUITS**

Design	Encapsulating design with large visor, where BA can be worn inside the suit.
Material	Outer: Flame retardant Nomex® fabric coated with “antistatic” butyl rubber & layer of Viton rubber, Inner: Chloroprene rubber with polymer laminate barrier
Seam	Suit shall be Stitched with aramide thread for superior strength and durability & Taped with a Viton rubber strip on the outside and a barrier laminate strip welded to the inside to provide a continuous barrier layer across the seam.
Gloves & Attachment	3-part glove system with inner barrier laminates glove, chloroprene rubber glove and outer knitted Kevlar glove. The gloves are attached with the Bayonet ring system for quick and easy exchange. For extra safety the ring system is fitted with a locking pin.
Footwear	Integrated socks/booties in suit material. Also, one pair of silicone coated overstocks is supplied together with suit to ease the donning (i.e. lower the friction) the safety boots.
Visor	Wide vision visor made from Impact & Chemical resistant 2 mm thick PVC
Zipper	Long heavy duty gastight zipper coated with chloroprene rubber. Positioned the front left hand side of the suit to facilitate easy donning and doffing. Closing downwards, to give the wearer the possibility to check zipper position and to reach the zipper handle himself. Zipper shall be protected by an external splash protective flap.
Ventilation	The suit shall be equipped with an integrated ventilation system where flow rate can be adjusted by wearer from outside by a handle. The flow rate shall be adjustable for 0-2-30-100 l/min. Overpressure can be controlled by means of 2 overpressure valves in the back of the hood, protected by separate splash protective pocket.
Colour	Red
Suit Size	XS – XXL
Accessories	1 pc Users’ Manual including Technical Data 1 pc coat hanger 1 pc grease stick for lubrication of the zipper
Certificate	Certified according to the European standard EN 943-1 & 943-2/ET & NFPA 1991

ANNEXURE 5 **NON-METALLIC STOPPERS & CHEMICAL SEALANTS**

Two (2) Set of PVC flange seal 3 mm thick, 8 each as per Indian standard
Two (2) Set of tanker flange seals 3 mm thick, 8 each as per Indian standard
Two (2) Special steel hexagonal nut and bolt as per Indian standard
Two (2) Spark-free lock release for acid
Three (3) Set plugging 5*200/70 mm, 10*150/70 mm, 5*100/70 mm.
One (1) Set polypropylene stopper 150 mm, 6*50/10 mm, 4*25/10 mm.
One (1) Set soft wood stopper 300 mm, 5*90/25 mm, 5*60/10 mm, 10*25/10 mm.
Four (4) Plastic wedges 800*500*200 mm, resistant to oils
Pipe clamps: 22 pieces, 15, 20, 25, 32, 40, 50, 65, 80, 100, 150, 250 mm (2 each)
Five (5) Plastic bags, 1500*800, 0.2 mm thick, with closing mechanism, transparent
Five (5) Leak plastering material, in paste, resistant to acid
Five (5) Sealing tape, 100 mm wide, 10 m length
Two (2) Hemp Package, 1kg pack
One (1) White lead 2 kg pack
Five (5) Cleaner for white lead 2 kg pack
Two (2) Cleaning cloth, 3 kg pack, grey
Set of 100 kg pads (300*30 cm), rolls (300 m*30 cm) & pillows (50*30 cm) absorbents

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- One (1) Foldable dam of 2500 Ltrs. resistant to acid, solvents, and oils.
- 30 m*3 m roll heavy gauge clear plastic sheeting
- Four (4) Wooden plug taper 10*25, 25*50, 50*100 mm 200 mm
- Taper plastic plugs (3 in each size) 300X90/25 mm, 300X60/10 mm, 300 X30/10 mm
- One (1) Hazmat transfer pump
- Three (3) 5 gallon containers with soda ash
- Three (3) 5 gallon containers with sodium hydroxide
- Two (2) Thermoplastic oversized drum, 250 Liters

ANNEXURE 7

HYDRAULIC RESCUE TOOLS

The Hydraulic Rescue tools shall be portable and light-weight. The tools and accessories shall comply with all requirements stipulated under EN 13204. All tools, hoses & pumps shall be equipped with compact, non- drip quick-connect couplings for fast and easy connection. Female couplers shall be equipped with automatic self locking to prevent accidental disconnecting. Couplers shall have 360 degrees free movement for ease of uncoiling. There should be a single hose for pressure and return line. Hoses shall be fitted in the center of the handle to avoid personal harm in case of leakage. The hoses shall allow 360° rotation. Tools shall be designed to withstand test pressure of two times their maximum working pressure. Each tool has to be equipped with safety valves for protection against overload for each cylinder and each tool shall have a separate safety valve for protection against overpressure in case one of the return couplers is disconnected. Moreover, all tools shall be tested for safety according to the American UL requirements (e.g. full load cycle tests) and comply with European CE safety standards and European Norm. EN13204. Cutters and spreaders shall be provided with a non-slip, U-shaped carrying handle which allows operator to reposition the tool from one side to the other without the need to reposition the hand. Position of carrying handle and control handle shall allow easy operation for right as well as left handed operators. The tool body, yokes, and spreader arms shall be made out of Aluminum alloy. All Aluminum alloy parts shall be anodized for protection against corrosion. All hinge pins, levers and cutter blades shall be made out of high tensile (heat treated) tool steel, blackened as protection against corrosion. Tools construction shall allow under water use for long periods without risk of any material damage. All hydraulic tools, pumps, hoses and accessories would be fully operational at temperatures of -20 up to + 55°C. The detailed specifications of all the tools are given below:

Hydraulic Spreader: (1 No.) Hydraulic spreader should have following min. specifications:

1. Minimum spreading force 25 mm from tips (acc. to EN13204) not less than 60 kN.
2. Spreading opening not less than 820 mm.
3. Weight including hydraulic oil shall not exceed 20.0 kg.
4. Maximum spreading force at steel tip or inlay (not at aluminum arm) not less than 500 kN.
5. Pulling force not less than 80 kN.
6. Pulling distance not less than 700 mm.
7. Squeezing force at steel tip or inlay (not at aluminum arm) not less than 125 kN.
8. Dimensions (LxWxH) shall not exceed 925x325x225 mm.
9. Equipped with high flow valve for quicker opening.
10. The carrying handle shall have integrated LED lights.
11. Flat face coupler shall be mounted directly to tool (no pigtail hoses allowed).

The tool should have well serrated tips for a good grip during spreading & squeezing, an operation handle with an accurate spring return to neutral position. It shall have built in double check valves & full protection against overload. The working pressure shall be at least 700 bar & the tool shall be supplied with the accessories listed below:

SIGNATURE & STAMP OF BIDDER



1. Two spare tips
2. One complete set of pulling attachments
3. One complete set of pulling chains

Hydraulic Cutter: (1 No.) Hydraulic Cutter should have following minimum specifications:

1. Cutter jaw shall be mounted at an angle of 30 degrees in relation to the body of the tool.
2. Blades must have U-shape design allowing them to pull material into the cutting recess
3. Blade opening at the tips of the blades bigger than 180 mm
4. Maximum force not less than 1350 Kn
5. Cutting round bar (acc. to EN13204) not less than 41 mm
6. Weight including hydraulic oil shall not exceed 16.5 kg
7. Dimensions (LxWxH) shall not exceed 790x270x290 mm
8. Permanently fixed carrying handle that functions through 360 degrees around the tool.
9. Central bolt head and nut mounted directly to steel blades flatter design for better access
10. To improve durability the blades must be machined from high grade tool steel and not forged
11. Aluminium blade holder fitted with a set of steel protection covers
12. To assist the operator while working in poorly lit areas, carrying handle shall have LED lights.
13. Flat face coupler (easy to clean) mounted directly to tool to allow fast coupling

The tool should have slim design for easy penetration in confined spaces, operation handle with an accurate spring return to neutral position. It shall have built in double check valves & full protection against overload. & the tool shall be supplied with the accessories listed below:

1. Maintenance set for the cylinder & arms
2. Maintenance set for the control handle
3. Spare Blade

Hydraulic Combi-Tool: (1 No.) Combi-Tool should have following minimum specifications:

1. Spreading force 21 Tons (on open arms)
2. Spreading distance 360mm
3. Spreading force 3.5 Tons (closed arms measured 25 mm from tips)
4. Squeezing force 7.5 Ton
5. Pulling length 415mm
6. Pulling force 5 Tons.
7. Cutting force in the recess should be 38 ton
8. Cutting opening should not be less than 225mm
9. Capable of cutting a round bar in recess of at least 32mm dia.
10. The cutting force in the center of the blade should be at least 3 tons.

1. Spreading force on the open arm – not less than 125 Ton
2. Spreading distance – not less than 450mm
3. Spreading force arm closed – not less than 4.5 Ton measured 25 mm from the tips,
4. Squeezing force – not less than 7.5 Ton
5. Pulling length – not less than 325 mm,
6. Pulling force – not less than 10 Ton,
7. Capable of cutting round bar – not less than 40 mm dia.
8. Weight – not more than 18 kgs.

The tool should have well serrated tips for a good grip during spreading & squeezing, with slim arms & yoke, for easy penetration in confined spaces, an operation handle with an accurate spring return to neutral position. It shall have built in double check valves & full protection against overload. The working pressure shall be at least 700 bar. Carrying handle should have integrated LED light system,



one quick coupler, weigh less than 15 Kgs & the tool shall be supplied with accessories listed below:

1. Maintenance set for the cylinder & arms
2. Maintenance set for the control handle
3. Spare Tip
4. Set Pulling attachments
5. Set of pulling chains (3 Mtrs + 1.5 Mtrs)

Hydraulic Telescopic Ram: (1 No.) Telescopic Ram should have following min. specifications:

1. Spreading force of the 1st plunger min. 22 Tons
2. Spreading force of the 2nd plunger min. 10 Tons.
3. Retracted length of tool max. 335mm (including cross head)
4. Extended length of tool min. 610mm. (including cross head)
5. Stroke of the 1st plunger min. 150mm
6. Stroke of the 2nd plunger min. 125mm.
7. Spreading force of 1st plunger – not less than 22 Ton
8. Spreading force of 2nd plunger – not less than 11 Ton,
9. Length retracted including cross head – less than 650 mm
10. Total Length including cross head – more than 1500 mm,
11. Stroke of 1st plunger – not less than 425 mm
12. Stroke of 2nd plunger – not less than 400 mm

The tool should have rotating cross heads for easy positioning & a perfect grip in every position, operation handle with accurate spring return to neutral. It shall have built in double check valves & full protection against overload. Working pressure shall be at least 710 bar. Carrying handle should have an integrated LED lighting system, 1 quick coupler, weight less than 9.5 Kgs & supplied with the accessories listed below:

1. Cross Head
2. Ram support
3. Flat base
4. Wedge tip
5. V – base
6. Spare cross head
7. Pulling chains & adaptors
8. Pulling heads
9. Connection piece
10. Extension pipes (min.250mm & 450mm)
11. Maintenance kit

Hydraulic Ram Jack: (1 No.) Ram Jack should have following min. specifications:

1. The spreading force should be 16 Tons
2. Retracted length including cross heads should be 615mm.
3. Extended length including cross head should not be less than 950 mm.
4. The pulling force should not be less than 5 tons.
5. Stroke should be min 350mm.
6. Max. Spreading force - Not less than 160 kn
7. Max. Pulling force - Not less than 45 kn
8. Spreading / pulling stroke - Not less than 350 mm
9. Retracted length - Not less than 600 mm
10. Max. Length - Not less than 1500 mm & not more than 1600 mm (including extension pipes)
11. Weight - Not more than 25 kgs

Accessories: All accessories like Flat Base round -2 nos, Wedge Tip, Conical Tip, Cross head – 2 nos, pulling chains, pulling heads, connection piece, extension piece of 165, 330 and 500 mm etc shall be supplied along with the Ram. The tool should have rotating cross heads for easy positioning



& a perfect grip in every position, operation handle with accurate spring return to neutral. It shall have built in double check valves & full protection against overload. Working pressure shall be at least 700 bar. 1 quick coupler, weight not more than 13 Kgs. & supplied with the accessories listed below:

1. Ram support
2. flat base & V-Base
3. Wedge tip
4. Spare cross head
5. Pulling chains & adaptors
6. Pulling heads
7. Connection piece
8. Extension pipes (min.150mm, 300mm, 600mm)
9. Maintenance kit

Hydraulic Pump: (1 No.) Petrol operated pump should have following min. specifications.

1. Working pressure not less than 700 bar
2. Operation capability of two tools simultaneously.
3. Number of stages is at least 3 stages
4. Engine should be a 4 stroke engine.
5. It should be petrol driven to keep weight min.
6. Fuel capacity of 1.7 Ltrs to give min. 7 hours operation.
7. Effective capacity hydraulic oil min. 4 Ltrs.
8. The unit should have a 3 x 3 stage axial pump.
9. The total weight of the unit (ready to use) should not exceed 23.5 Kgs.
10. The operational temperature range of the pump should be -20°C up to +55°C.
11. The pump should be able to give full pressure (720 bar) to two tools simultaneously.
12. The pump should have 2 quick couplers for connecting **three Two** tools simultaneously.

Hydraulic Foot Pump: (1 No.) foot operated pump should have following min. specifications:

1. Working pressure not less than 700 bar.
2. Number of stages is at least 2 stages.
3. The pump shall have oil capacity for operation of any tool including telescopic ram jack.
4. The weight of the pump should not exceed 8.5 Kgs.
5. The pump should have only 1 quick flat face coupler.

Hose 10 Mtrs: (2 Nos.) Hydraulic hose should have following min. specifications:

1. The high pressure hydraulic hose (preferably two in one hose) will be light in weight
2. Working pressure shall not be less than 700 bar.
3. At least 10 Mtrs long with a quick coupler at the ends.
4. The safety ratio of the hose will be at least 1:4 of the working pressure.
5. The weight of the hose should be less than 5 Kgs.

Lifting Bags (Hp): (1 Set.) High Pressure Lifting Bags should have following min. specifications:

1. Working pressure 12 bar.
2. Made of Kevlar reinforced nitrile rubber
3. 3 layers aramide reinforcement.
4. Non slip design capable interlocking when 2 bags are placed on top of each other.
5. Should have a quick connection with automatic double locking system.
6. The insertion thickness should not be more than 28 mm including profile.



7. Should be resistant to ozone & other chemicals.
8. The bags will be of the following capacities:

Lifting capacity (Approx in Metric Tons)	Inflation height - Not more than	Dimensions- Not more than	Weight -- Not more than	Quantity
20 tons	275 mm	525 x 450 mm	7 kgs.	2 nos
50 tons	415 mm	850 x 750 mm	15 kgs.	2 nos
85 tons	560 mm	950 x 875 mm	25 kgs.	2 nos

Sl.	Description	Quantity
1	Pressure reducer 200/ 300 bar to 12 bar	2 nos.
2	Dual Controller	2 nos.
3	Air Hose 5 mtrs. with couplings	4 nos.
4	Air Hose 10 mtrs. with couplings	2 nos.
5	Shut off hose with safety valve	6 nos.

ANNEXURE 8**UTILITY TOOLS SET**

Petrol Operated Chain Saw (2 units.): The petrol operated chain saw shall be of STIHL make MS660 only. MOC of the engine shall be Magnesium die casting and it shall be petrol operated of Min. 90 CC. The power should be Min 7 HP / 5 Kw and the engine idling speed shall be not be more than 2500 RPM. The maximum engine speed (with guide bar & chain) shall not be more than 13000 RPM. Carburettor shall be diaphragm type and the fuel tank capacity shall not be more than 1 Ltr. The clutch shall be centrifugal type made of metal without liners. Dry weight without guide bar/chain shall not exceed 7.5 Kg & with guide bar/chain shall not exceed 9Kg. Guide-Bar length should be min. 63mm It shall be roller bearing type with 1.6mm groove. Complete Engine, its guide bar & its chain shall be manufactured by the same company only. This shall be certified by the OEM. Lubrication shall have oil channels in chain links to funnel oil directly to rivets recesses shall be stamped into drive links for better distribution of oil over sliding surface of the guide bar. Lubrication shall be automatic type, driven by worm gear. Chain oil capacity shall not be more than 375 ml Chain tensioning shall be done from side of the machine and not from the front. Chain shall be with min. 1.6 mm drive link thickness with a pitch of max. 10mm. ***Chain Material shall be Carbide Tipped with tempered teeth for strength & corrosion resistance. Two spare chains shall be supplied with each tool.*** There shall be a witness mark for limit of sharpening. All important operations of the engine like choke, idle, & stop shall preferably be operated by single lever operation. Dimension of the machine shall not exceed 110cms x 22cms x 25 cms Cutting capacity should be 185 CM circumference wood. Two spare chains, one plug spanner with screwdriver and an original instruction manual shall be supplied with each tool. Name of the manufacturer shall be embossed / engraved on the machine. Printing or stickers shall not be permitted. Test Report certifying all the parameters should be produced at the time of supply. Past The product shall be CE certified and the manufacturer shall be an ISO certified company.

Petrol Operated Cut-Off Saw (2 units): The petrol operated cut off saw shall be of STIHL make only TS 800. The MOC of the engine shall be Magnesium die casting and it shall be petrol operated of Min. 97 CC. Power should be Min 6.5 HP and the Idle Speed shall be not more than 2300 RPM. Max. engine speed shall be not more than 9500 RPM. The carburettor shall be diaphragm type with fuel pump. Fuel Tank capacity shall not be more than 1.5 Ltr. Clutch shall be centrifugal type of metal without liners. Water attachment shall be provided and shall be of the same manufacturer. The capacity shall be min. 10 ltrs. Dry weight without cutting attachment and water attachment shall not exceed 13 Kg & with cutting attachment. Cutting depth shall be minimum 140mm. Filtration shall be by air filtration with cyclone air routing type with paper dual element filter.



Starting shall have elastic material which will prevent starting shock from being transmitted during start up. It shall have a decompression valve and manual pull rope for easy starting of the engine. The rope shall be minimum 4mm diameter and shall have a double pawl arrangement for easy starting. Belt shall have semi automatic adjustment which shall be spring loaded. The belt shall be 4 PK Ribbed type. A wheel set arrangement shall be provided for easy movement of the machine. An adjustable wheel guard shall be provided with Rubber ring on both sides to reduce vibrations of the guard. The machine shall be capable of accommodating wheels of 350 M.M. diameter. Cutting blade shall be from the same manufacturer only. This shall be certified by the OEM. Water sprinkle nozzles shall be provided from both sides for better water circulation and cooling during cutting. A safety Interlock shall be provided with the trigger. A full choke and half choke arrangement shall be provided for quick starting in cold or hot climate. The machine shall be Rust proof. Spare White Diamond cutting wheels (1 Nos.), one plug spanner with screwdriver, and Original Instruction Manual shall be supplied with the unit. Name of the manufacturer shall be embossed on the machine. Printing or stickers shall not be permitted. Unit shall be CE certified & mfgr. shall be ISO certified. The product shall have DLG Certification

Electrically operated Chain Saw (2 units.): The motor of the machine shall be 230 Volts and minimum 2.4 kW. The Frequency shall be 50 Hz. The motor shall be die cast, with aluminum housing and shall be vertically oriented. Weight of machine shall be within 12-15 Kgs. Guide-Bar length of the rescue chain saw, shall be minimum 24". It shall be roller bearing type with 1.6mm grooves and 3/8 pitch. The **rescue chain** shall be able to cut all kinds of materials like wood, bullet proof glass, metal as well as all types of composite materials. The **rescue chain** and guide bar shall be from the same manufacturer, and bidder shall provide a confirmation letter from the OEM for supply of the same. Also, an authorization letter from OEM shall be provided in the name of the bidder, authorizing him to offer their products. Lubrication shall have oil channels in the chain links to funnel the oil directly to the rivets. The recesses shall be stamped into drive links for better distribution of oil over the sliding surface of guide bar. Lubrication shall be pump type. Chain velocity shall be more than 17 m/s. Oil tank capacity shall not be less than 0.15L. Cutting capacity should be min. 250 cm circumference in wood. Two extra carbide tip chains shall be supplied with the machine. Original Instruction manual and complete spanner set shall be supplied with the machine. Name of the manufacturer shall be embossed engraved on the machine. Printing or stickers shall not be permitted. Test Report shall be produced during supply.

Electrically operated Cut-Off Saw (2 units.): The motor of the machine shall be 230 Volts and minimum 2.4 kW. The Frequency shall be 50 Hz. The motor shall be die cast, with aluminum housing and shall be vertically oriented. Weight of machine shall be less than 15 Kgs. Name of the manufacturer shall be embossed engraved on the machine. Printing or stickers shall not be permitted. Test Report shall be produced during supply. The diamond wheel shall be Stihl make SB 80 Grade. It shall be able to cut stone, marble, granite as well as construction steel up to 10 mm thick. It shall be quick and versatile in asphalt, building blocks and concrete. It shall be able to cut all material in dry or wet conditions. The thickness of the wheel shall be minimum 3 mm. The wheel shall be suitable to rotate at a maximum of 5500 rpm. The wheel mounting hole shall be maximum 20 mm and the wheel rotating direction shall be clearly visible from both sides. All safety instructions shall be mentioned on the wheel and the manufacturer's details shall be clearly laser marked on the wheel.

ANNEXURE 09

POSITIVE PRESSURE VENTILATOR (1 unit)

The PPV shall be powered by a Honda or equivalent make engine of minimum 18 BHP. ***It shall be of self start with a back up recoil rope start mechanism.*** The unit shall be cart-style designed with rear-mounted wheels, a full-height frame, and a tilt-up, full-width handle for easy positioning and rapid deployment. The rubber, never flat tires shall be designed with an "one step" braking system utilizing a single-foot operated brake pedal to assure positive engagement to prevent the unit from rolling during operation.



The tires shall be engineered to be in the back (engine side) of the fan to help protect the shroud while moving the unit and allow the unit to be re-positioned on the fire scene without personnel turning their backs to the doorway and which can be rolled up stairs easily. Ventilator with wheels on the shroud side shall not be acceptable. The entire frame of the unit shall be constructed of steel that shall surround the shroud and the airfoil propeller in a roll-cage design that shall enhance lifting and user safety. The blades shall be constructed of precision-cast aluminium alloy materials only. The blade shall be driven by the gas engine through a direct drive. Ventilators utilizing belts, pulley, gears or additional shafts shall not be acceptable. Ventilators using plastic or nylon blades shall not be acceptable due to the high radiant heat found on fire scenes. The fan will have a **steel shroud to provide** durability with maximum airflow. The shroud and the safety grill shall be designed as to provide maximum air velocity. The positive pressure ventilator shall have a tilt control with four positions, including one position that can direct airflow downward and shall be equipped with a lever to set positions of the air flow to 18, 10, 0, and -10 degrees above and below horizontal level. It shall have a full-width handle for easy grip with heavy-duty gloves. Air flow shall not be less than **40,000 CFM**. The complete unit shall be of SuperVac, Leader or equivalent make only.

General Requirements: The vehicle shall conform in all respect of the provisions contained in the M.V. Act 1988 and M.V. Rules 1989 or to any other statute modifications or re-enactments' thereon from time to time. All equipment necessary for R.T.O. clearance shall be provided on vehicle.

Painting & Marking: The entire appliance will be painted in "FIRE RED" paint & thickness of 0.12 to 0.2 mm thickness, using double coat spray painting on the outside. Also on either side of the vehicle (logo of Client & name) monogram will be painted in golden yellow colour at suitable places. The chassis and wheel arches will be painted black. All the piping will be painted red. Two coats of anticorrosion & one zinc phosphate-priming coat will be applied before final painting of fire tender. The Vehicle will be clearly and permanently marked with the following, preferably on a metal plate attached in the driver's cabin & also near the pump operating control panel.

- ↪ Manufacturer's name or trademark.
- ↪ Year of manufacture.
- ↪ Capacity of Pump in LPM & Water Tank in Ltrs.
- ↪ Engine & Chassis Nos.
- ↪ All instrument controls will be identified with nameplates.
- ↪ All hoses & valves inlet and outlet will also be identified by suitable nameplates.



(Schedule - 6) Water Bowser 20 KL

Technical Specification:

Overview: The Water Bowser shall be designed & manufactured in compliance with specifications given below, relevant Indian/International standards (wherever applicable) & as per sound engineering practices. It shall be designed to effectively & efficiently carry 20,000 Liters of Water, a pump with a discharge capacity of 8000LPM @ 8 Bar, driven through suitable Power Take Off (PTO) units, a Monitor of approximately 6000 LPM, equipment, accessories, etc. All equipment & accessories will be fixed on appliance in a compact, neat & ergonomic manner & will be easily & readily accessible for immediate use during emergencies. Due care shall be taken to ensure that all aggregates are designed for ease & comfort of the operator.

Chassis: The Water Bowser will be fabricated on a suitable 35 Ton (8X4) BS-VI chassis with minimum 300 BHP to be procured by fabricator on behalf of the department. Payment for chassis shall be done by department on submission of Performa Invoice of chassis manufacturer. Chassis shall have an OEM fitted fully automatic transmission with torque convertor. In case the chassis is not available with an automatic transmission from OEM, it shall be retrofitted by fabricator through an authorized dealer. Drag hook or eye of adequate strength & design will be provided at front & rear of the chassis.

Design & Construction: The Water Bowser shall be designed to be as compact as possible with ease of accessibility to all service parts. Pump & other equipment controls shall be so arranged that user can operate them easily & conveniently. Lever type valves shall be preferred unless impractical in any way. Material of construction shall be used with a view to combine lightness with strength & durability. No form of wood, shall be used anywhere. All parts which form water ways, come in contact with water/foam or are made from materials prone to corrosion, shall be treated with a good quality anti-corrosion system/treatment/paint/zinc coating etc. Vendor shall submit the weight distribution chart, design of supporting structure along with design calculations with the technical bid, failing which the offer is liable for rejection.

Pumping System: The pump shall be a Godiva / Rosenbauer / Sides / Magirus / Oshkosh or equivalent CE certified, centrifugal type, capable of delivering, not less than 8000LPM@7 bar pressure. The Pump casing, impeller, delivery outlets, etc. shall be made of GM conforming to IS 318 (LTB Grade 2). The wearing rings & other parts that may be subject to frequent wear shall be of renewable type. The impeller shaft will be of SS & will be carried in anti-friction bearings. The impeller neck rings & impeller rings will be renewable type. The bearing housing shall be of Cast Iron. An easily accessible drain valve will be provided at the bottom of the casing to enable easy draining of the complete system. The shaft sealing will be of self-adjusting type as per pump manufacturer's standard design. It shall be provided with an OEM priming system of reciprocating, exhaust ejector or water-ring type. It shall be of rigid construction & modularly designed for ease of maintenance. It shall be capable of delivering its full performance with all strainers (external & internal). The discharge of the pump shall be routed to the outlets for hand lines & monitor fitted on the top. The other construction details shall be as per the following specifications. The suction inlet of the pump shall be of a suitable size to give the rated output of the pump. The inlet shall be round-thread type. The connection from the water tank to pump will be suitably sized to allow full pumping at rated output. A pneumatically actuated butterfly valve will be fitted between suction inlet of pump & water tank. There shall be 6 outlets of 63 mm with screw down delivery valves (fully complying to DIN standards) & female instantaneous couplings fitted on a distribution manifold. One connection will be taken from manifold to monitor with a flanged connection. Pump will be rear mounted & shall have 4 mounting points to ensure that complete load is evenly distributed. Mounting shall be done on heavy "C" channels / plates & will be secured to the chassis by bolting. Welding shall be strictly avoided. The rotating drive flange shall be provided with a guard so that injury is minimized during operation. Guard shall be bolted & easily removable. Details of pump such as its make & model, supported with catalogs / brochures / drawings etc. shall be attached with the offer failing which the offer is liable for rejection.



Integrated Pump Control Panel: The fire pump & controls shall be fitted with electro-pneumatic valves, controlled by a central J1939 CANBUS system. It shall be possible to engage PTO/s from the control panel without having to go into the driver's cabin. Deliveries, monitor, & hose reel valves, shall be controlled by soft touch switches in control panel. A 12.5 LCD/TFT display shall show all operations in real time. For example if operator operates a hose reel valve to ON position, it shall be displayed on the screen. Further the CANBUS system shall incorporate a real time flow diagram showing flow of water/foam/premix solution depending on position of valves opened. A repeater 7" LCD / TFT display shall be provided in the cabin for lead firemen to monitor the situation. Panel supply voltage shall be regulated from battery voltage fluctuations through separate isolated power supply. Power supply shall be indicative of Battery Voltage OK, Reverse connection & Active output through designated LEDs. Apart from pneumatically controlled CANBUS, an arrangement for manual override for different valves or operations required during fire-fighting shall be provided in a panel. Manual override panel shall be provided at an accessible location in such a way that it can be easily operated in case of malfunction of pneumatic CANBUS without difficulty. System shall have:

Monitoring Parameters:

- a) Pump Hour Meter
- b) Compound / Pressure Indication with display of distance from which water is primed.
- c) Low & High Pressure Indication
- d) Engine Coolant Temperature
- e) Pump RPM Indication

- f) Water and/or Foam Level Subsystem
 - o Bar Type Display

 - o 100 level resolution with Percentage

 - o Special markers for Empty, 1/4, 1/2, 3/4 & Full

 - o Real time Tank Volume Indication in Litres

- i) Audio/visual alarm once water/foam level is below pre-set volume to avoid dry running.
- j) Emergency call bell for Drivers Cabin.
- k) Auxiliary Lighting Control for Pump Room Light & Spot Light
- l) Logo of the Purchasing Department shall be Included on the welcome screen.
- m) The Front Bezel of the Control Panel shall be IP65 rated
- n) Panel shall have Multiple Language option i.e. Hindi & English

Priming System: To ensure that the priming system is fully compatible with the pump, the priming system shall be OEM supplied. The system shall be either reciprocating type, water-ring type or exhaust ejector type, capable of lifting water from 7 Mtrs. depths within 23 seconds. In case the primer is twin piston reciprocating type or water-ring type, means shall be provided to automatically limit the engine RPM to the manufacturer's recommended speed. The system shall be maintenance free & shall be constructed of suitable materials to prevent corrosion due to salty / brackish water.

Water Tank: Water tank shall be of 20,000 Ltrs. of MS plates (6 mm bottom, 5 mm sides, top & baffles), die-pressed on all sides. Butt-welded joints shall be minimized. Wherever unavoidable, they shall be radio-graphically tested. All other joints shall be DP tested. Welding shall be done using MIG welding process with compatible electrodes. It shall be suitably baffled to prevent surge while cornering / braking. Baffles shall be bolted & fasteners shall be SS only. Baffles will be arranged in a manner to facilitate easy cleaning of the tanks. Tank will be mounted on a subframe (made from MS 4" section) using metacones which will be bolted with chassis using high tensile bolts. 'U' Bolts shall not be used for mounting of tanks. Centre of gravity shall be maintained as low as possible. Suitable hooks / lifting eyes shall be provided on top of the tank for maintenance / repairs.



Tank shall have a filling orifice of 250 mm & maintenance manhole of 450 mm with hinged or threaded cover marked "WATER". Two filling connections will be provided on the sides of the tank terminating in 63mm male instantaneous couplings (SS) with strainer. The line will be designed to ensure that inflow of water into the tank is sufficient to maintain the rated output of the pump while tank is being replenished. These connections shall be fitted with a valve to prevent water leaking through the filling pipe & shall be provided as close to the pump as possible. Valve may be of NRV / Ball / butterfly type. A 50mm drain line with a valve will be provided to drain the tank. A cleaning hole of 250mm will be provided at the bottom of the tank & will be taken down to a point below the chassis without reducing effective ground clearance. One overflow pipe (diameter determined as per filling connections provided) shall be fitted to the tank. In case the inlets provided at the sides are more, the overflow pipe diameter shall be suitably changed to accept the additional flow. As a thumb rule, diameter of overflow pipe shall be two times the sum of all incoming pipes. This is to ensure that the tank does not get unnecessarily pressurized. Overflow pipe will be taken up 2 inches higher than the top of the vehicle & cut at an angle of 45 degrees. The tank shall be hydraulically tested at 0.5 kg/cm² pressure. The inlet line in the tank shall have an adequately strong deflector plate, which will avoid the incoming jet of water from hitting the tank side/roof. All plumbing shall be reasonably accessible for maintenance purposes. Screwed bends, joints shall be avoided as far as possible. All the joints will be flanged type & shall have O ring sealing. Rubber gaskets shall not be used anywhere in the plumbing. All the outlets & inlets from the tank shall be taken by installing nozzles of suitable length & reinforcement pads. Manufacturer shall provide complete design data of metacones & subframe including load calculation & metacone sufficiency failing which their offer is liable for rejection.

Power Take Off: The PTO for driving the pump shall be taken off the automatic transmission & shall be of suitable make & ratio for the rated output of the pump & torque of the drivetrain. The lever / switch for engaging the PTO. will be provided in driver's cabin. Necessary modifications, to the standard drive system as available on the chassis, shall have to be done by the vendor so as to adopt the PTO unit in the system. Necessary supports for PTO Unit, propeller shaft coupling, universal joints etc. for power input to & output from PTO Unit shall be provided by vendor. The drive assembly components (shafts, coupling etc.) shall be dynamically balanced & vibration at any of the rotary parts shall be minimized.

Cooling System: In addition to the radiator cooling, an indirect cooling system of the open circuit type shall be provided (if required) to keep the engine from overheating during extended use in tropical climates & when the ambient temperature is over 40° C. The cooling system shall be so designed that the full power output of the engine can be maintained during continuous stationary running without overheating. The operating temperature of the engine cooling water shall be thermostatically controlled. The oil in the sump shall be prevented from overheating & the pump characteristics shall be chosen in a manner so that the engine does not run at its maximum speed for the required output. The cooling water outlet pipe from P.T.O. & additional cooling tank shall be connected through a suitable diameter pipe. The end of the pipe shall terminate in a threaded connector.

Pipelines & Valves: The complete pipeline circuit on the vehicle including fittings will be of SS316 material only. All valves up to 2" size will be lever operated ball valves & all valves above 2" size shall be butterfly valves. Seats of the valves shall be easily replaceable, readily available. All the lines shall be tested hydraulically for at least 3 times the working pressure or 1.5 times the working pressure of the pump. A complete flow chart & schematic diagram including the testing parameters shall be submitted with technical bid failing which the bid shall be rejected.

Low Pressure Roof Monitor: The roof monitor will be of self aspirating type, having a flow rate of min. 6000 LPM@10 bar pressure. It will be suitable for throwing water as well as water-foam mixture with a throw range of 80 Mtrs. (water) with a self aspirating foam barrel. It will be compact in height and suitable for rooftop application. Horizontal rotation range will be 270° and vertical range will be -18° up to +70°. The monitor nozzle will be 6000 LPM with full controls for spray / jet.



A foam barrel will be provided with integrated aspiration / deflector plates for improved foam quality and spray function. Monitor will be of Magirus / Rosenbauer / Sides / Vulkan make.

Cabin: Enclosed accommodation for driver and officer in charge shall be provided in a single compartment OEM provided cabin. The floor of the cabin shall be provided with good quality anti-skid vinyl matting. Driver will be provided with large size rear view mirrors on both sides of the cab & convex round mirrors for overall rear view of the vehicle from top to bottom & left to right. A First aid box shall be mounted in the cabin at easily accessible location.

Rear Superstructure: The rear superstructure (after cabin) shall be fabricated from MS sections / angles / channels or from aluminium extrusion profile section framework constructed with bolt & nut system, & panelled with aluminium plates by means of glue without welding. The profiles (in case of aluminium), shall be of strong & solid construction (ISO6063T6 material is preferred), light in weight & intrinsically rectangular design, with a distortion insensitive bearing. ***In both cases, superstructure shall be guaranteed for corrosion resistance for the complete life of the vehicle (min 10 years).*** Roof panels shall be made of aluminium Chequered / padded plates & the roof shall be strong enough for being walked-on. Intermediate walls & shelves of the lockers shall be constructed from aluminium sheets, which are panelled to the structure by means of glue without any welding. The outer panelling of superstructure will be done from 3 mm aluminium sheets. Inner panelling will be done from 2 mm aluminium sheets. Complete top of the superstructure shall be covered with 3 mm aluminium sheets / chequered plates. Sheets of outer panelling will be glued to framework. Rivets / screws not allowed.

Roller Shutters: For the easy operation of the Water Bouser, MCD make roller-shutters covering equipment lockers shall be installed on both sides. These shutters shall be rolled inwards underneath the roof giving unobstructed access to the equipment lockers & the equipment / accessories fitted in the vehicle. Roller shutters shall be made of hollow rectangular shaped aluminium links which will be inter connected with the help of plastic / rubber profiles, sealing the roller shutter watertight when closed. They would be durable, weather & corrosion resistant & capable of opening in every position of the vehicle even in rough terrain. The sections of the shutter shall be powder-coated / anodized to a smooth finish & aesthetic look. The shutters shall have a locking mechanism (single key) to prevent accidental opening during movement of the vehicle. A master switch for isolating locker lighting circuit shall also be fitted in the driver's cabin. LED lights of min 1 Mtr. length, shall be provided on both sides of shutter (internal lighting) & in drip channel on top (external lighting). The lights shall be controlled by a magnetic switch which is embedded into the profile. The shutter shall be fitted with pull down straps. ***The shutters shall be fitted with an OEM electronic central locking system.*** Complete shutter assembly including main horizontal sections, side, bottom & drip profiles, LED lighting, as well as the single key locking system shall be from shutter OEM only.

Electrical Equipment: Adequate lighting arrangement shall be made in all compartments. All equipment lockers will have internal lighting arrangement automatically switched on & off by opening/closing of doors/shutters. All wiring will be properly fixed in position & will be protected against heat, oil & physical injury. To the extent possible all wiring will pass through conduits. All wires shall be stranded copper or copper alloy conductors of a gauge rated to carry at least 125 percent of the maximum current for which the circuit is protected & shall be uniquely identified by colour coding or permanent marking. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The use of star washers for circuit ground connections shall not be permitted. All electrical circuits will have their own fuses, suitably marked & grouped in a common fuse box, located in an easily accessible position. Provision will be made for 4 spare fuses in the box.

Light Mast: An NFPA compliant, low profile, roof mounted lighting system, fitted with IP 68 certified 4X230 Watt LED lights, vertically elevated to 4.5 Mtrs above roof, capable of taking power from vehicle directly, operating on 12 & 24 volts shall be supplied. Lights shall be rated for an output of 80,000 lumens, & have a life span of 50,000 hours. Lights shall have flood as well as spot combination light patterns.



Mast shall have dual tilt remote control positioner with rotation & tilt to provide total coverage, & allow a person to accurately aim for directional positioning. In addition there shall be a one button command to automatically retract mast, turn out lights & stow the system into transport position. The mast shall be made from aluminium 6061-T6 extruded profiles, with a base diameter of minimum 125mm. It will have tilt as well as pan angles of not less than 350 degrees, full extension from transport position not exceeding 60 seconds, wind speed handling of 100 Kmph & an integrated saddle installation. The operation pressure shall not be higher than 20-25 psi. A look up light will be integrated into the mast & all wiring right up to the lights as well as RCP will be internal. External wires shall not be accepted anywhere. The light mast shall be shock & vibration certified as per SAEJ1455 & MIL-STD-810G & hand held remote shall comprise of a glove friendly, impact resistant & water proof pistol grip design, which is easy to handle. The remote shall have a message display showing all functions of mast as well as error messages for trouble shooting. In case of power failure, it shall be possible to stow the mast manually without any special equipment. Weight of the system shall not exceed 70Kgs. Mast shall be of Willburt, Nightscan, Rosenbauer, Fedral Signal, Teklite, Brimotor, or Command Light make only.

Under-body & Perimeter Lighting: LED lights shall be installed under the cabin & body around the perimeter of the vehicle, in compliance with NFPA 1901. The lights shall be strategically placed to illuminate the immediate ground area around the vehicle. The under body lights shall be switchable from the cabin but also automatically activate when any of the cabin doors or shutters are opened. The remainder of the lights shall be switched on from the cab. There shall be one flashing red LED located in cab, within clear view of the driver, which shall be automatically illuminated whenever any passenger or body door is ajar, or if the telescopic light mast is not properly stowed. The light shall be marked "Do Not Move Apparatus When Light Is On" in compliance with NFPA 1901. There shall also be provided 5 LED lights at the highest level of the vehicle for area lighting in the vicinity of the vehicle. These shall be fitted at strategic locations on the sides (above the shutters). Minimum one light shall be installed above each shutter. Blue strobe lights shall be provided at all four corners of the vehicle top (two on cabin & two at the rear). These shall be of the high intensity type with regular & intermittent flash pattern. Cover of these lights shall be moulded as per body profile & shall sit flush with the base & sides. Reference for complete lighting package may be taken from reputed international vehicle manufacturers like Rosenbauer, Magirus, Oshkosh, etc.

Light Bar & PA System: The LED V-Bar shall be mounted on top of the driver cabin. The V-Bar shall have 7 LED Beacons arranged in V shape to create a maximum radius of light dispersion. It shall collectively consist of Red, White & Blue beacons in a V shape angle as per latest CMVR act. All the beacons shall sync with each other & provide seamless revolving flash patterns. The maximum output wattage shall be 25 Watts per beacon. The V-Bar shall have minimum of four flash patterns & the flash rate shall be as per SAE J845 standard. It shall have over voltage, under voltage with auto shut down & reverse polarity protection. Each beacon shall be constructed with Polycarbonate Clear Dome. The overall V-Bar shall be IP65 rated & shall have a test certificate from a NABL accredited organization. The V-Bar shall be CE Certified. The LED shall be of surface mount device type suitable for outdoor use. The beacon manufacturer shall provide LM80 test results from LED manufacturer. The PA system shall be of minimum three tones & min. 120 decibels. It shall be integrated with the vehicle horn system, so that whenever required, the driver can switch between the horn & PA system. The PA system shall have an integrated mic with volume control. Mic shall have a telephone cable so that it can be used from driver's side as well as officer's side.

Fittings & Accessories: Following accessories will be provided on the appliance:

- a) Two Spot lights on front roof top (next to light bar)
- b) Two high intensity Strobe lights in front grill
- c) Two Fog lamps on the front bumper (Hella make)
- d) Four Blinker type traffic indicators (OEM supplied)



Ladder With Beam Gantry: The vehicle shall be fitted with a single tier ladder beam gantry on the vehicle roof. The system shall be suitable for fixing a 10.5 m trussed type extension ladder. The beam gantry system shall allow slipping & loading of the ladders entirely from the ground level without the need for climbing on to the deck of the truck. It shall be permanently attached to the truck & shall balance & pivot at predetermined points to allow the ladder to be cantilevered & tilted towards the ground when it can be removed from the beam & go to work from ground level. The beam gantry shall house automatically using a safety latch. The beam & slide mechanism shall be made of aluminum 6061-T6 alloy, & shall use solid bearing technology. The beam shall be attached with a “T” shaped handling bar which allows a fire fighter to grasp & draw back the main beam & ladder to a point where it counter balances & can be placed on ground for taking away the ladder. The automatic safety catch fitted at the base of the beam shall secure the beam from moving when it is housed in the vehicle & when the vehicle is moving. Additionally, the rubber and plastic parts used in the locking of the ladder to the gantry shall be of reputed make and shall be guaranteed by the OEM for minimum 10 years or 5,000 operating cycles. The aluminum extension ladder (CE marked) 10.5 Mtr. trussed type Aluminum Double Extension ladder (as per **JCDD/10** standards) shall be supplied along with beam gantry, suitable for fixing in the same gantry. The design of the beam gantry shall be such that the ladder can be released without difficulty from a reasonably accessible position. Means shall be provided for locking the ladder when stowed. The details of the Ladder and Beam Gantry, such as its make and model, supported with catalogues/brochures/drawings etc. should be attached with the offer. Bidder shall submit an OEM authorization failing which the bid may be rejected.

Equipment: The equipment to be supplied on the appliance will be as per the list below:

1.	63 mm, 22.5Mtr. RRL Fire Hoses with elastomeric outer coating with GM couplings.	6 Nos.
2.	CE marked Aluminum Trussed ladder 10.5 Mtrs.	1 No.
3.	Suction hose with GM coupling 4.5 meters as per pump suction.	2 Nos.
4.	Suction strainer to suit the above mentioned suction hose	1 No.
5.	Basket strainer to suit the above mentioned suction strainer	1 No.
6.	Universal wrench to tighten the above mentioned suction hose	1 No.
7.	Manila Rope 40 Mtr. (50mm circumference)	2 Nos.
8.	Branch pipe GM universal 63mm	4 Nos.
9.	Set of nozzles 12mm,16mm,20mm,25mm,32mm, one each	1 Set.
10.	Double female adapter	2 Nos.
11.	Double male adapter	2 Nos.
12.	Fireman’s axe with belt & pouch	2 Nos.
13.	Crow bar	1 No.
14.	Sledge hammer	1 No.
15.	Fire Hook	1 No.
16.	Elkhart/TFT hand nozzle with pistol grip, aluminum construction, 30-95-125-150-200 GPM plus flush, 63mm male inlet, hard anodized finish & less than 3kg.	6 Nos.
17.	Hand operated Combi Tool as per specifications at “Annexure A”	

General Requirements:

1. GVW of the vehicle shall not cross the recommended GVW of chassis manufacturer.
2. Weight distribution diagram should be submitted to officer-in-charge for approval.
3. Vehicle should conform to provisions contained in the M.V. Act 1988 & M.V. Rules 1989.
4. Drawings & QAP shall be approved by client before commencement of fabrication.
5. Stage inspections shall be carried out based on approved drawings & QAP only.
6. Safe custody of chassis till the complete vehicle is handed over to client is vendors responsibility.



Scope of Work:

1. The scope of work includes procurement of chassis on behalf of the client & safe custody.
2. Chassis shall be covered by an indemnity bond equal to cost of chassis, by successful bidder.
3. Design, engineering, fabrication, inspection, supply, transportation & delivery at client's site.
4. Imparting training to client's personnel on operation & maintenance without additional cost.
5. Workmanship should be elegant & with highest quality of engineering practices.
6. Any documents required for fitness of Vehicle from RTO shall be supplied by the vender.
7. There should not be any loss/ damage to tool kit, fittings & accessories provided with the chassis.
8. In case of loss or damage, it shall be made good by the manufacturer at their own risk & cost.
9. Once vehicle is ready, revalidation of temporary registration shall be done for 30 days.

Operation, Maintenance & Instruction Book:

1. Instruction & inspection manuals including operation & maintenance shall be supplied (3 copies).
2. Books should include itemized & illustrated spare parts list giving reference numbers of all parts.
3. Operation & maintenance manuals of all aggregates like pump, PTO, monitor, Light mast, etc.
4. Detailed drawings with all dimensions at the time of delivery.
5. Spare part lists of pumps/ monitors with approximate price should also to be supplied.

Documents Required During Submission Of Offer:

1. Suitability of PTO for Pump & Torque calculation.
2. Schematic flow diagram.
3. Characteristic curve of pump, showing duty points.
4. Drawing showing PTO arrangement.
5. Elevation & plan of tender.
6. Load Distribution Plan of the Fire Tender
7. Catalogues of all bought out items.
8. All other documents / authorizations as specified in the technical specifications

Documents Required After Completion Of Order:

1. As built drawings of tender showing details of dimensions, storage, fittings ETC.
2. As built drawings for water & foam tanks.
3. Flow diagram showing all piping tanks, pumps, valves etc.
4. General Arrangement & cross section drawings, characteristic curves & other details for pump.
5. As built Drawings for Installation of PTO Units.
6. As built Drawings & data for auxiliary foam induction device.
7. As built Line diagram for electrical circuits.
8. All inspection & testing records for tanks, pumps, PTO's, piping, valves, monitor etc.
9. Operating & instruction manual for the complete vehicle.



Delivery: The manufacturer/fabricator shall complete the Water Bouser within 6 months from receipt of chassis. After fabrication & acceptance, the fire tender shall be delivered at site at manufacturers own risk & cost. The cost of transportation, transit insurance & temporary registration shall be in the scope of the vendor only. Final registration shall be done by the client.

Performance Guarantee: The manufacturer shall guarantee the design, material, workmanship & the performance of the complete unit for a period of 12 months from the date of supply of completed vehicle. Any mechanical defect, faulty workmanship or operational defects found during this period shall be rectified by the vendor at owner's premises without any extra cost of Department.

Training: After supply of vehicle, vendor shall provide training on operation & maintenance including chassis at *Department* & charges for the same shall be included in the price. Additional one week free training will be given at owner's site within warranty period.

Deviations: There shall be no deviation to the specification unless agreed by owner in writing. In case there are any deviations from the above mentioned specifications / tender Documents, the vendor shall give the same separately for the scrutiny of the technical committee. In case there are any valid deviations, these may be considered by the Department. However, the department shall have absolute power & may reject the offer without assigning any reasons whatsoever.

Painting & Marking: The entire vehicle paint system shall be guaranteed for fade resistance for 5 years & anti-corrosion for 10 years. All painted surfaces shall withstand peeling, blistering, etc for a period of at least 10 years from delivery. The manufacturer shall give this in writing at the time of delivery. Once the paneling is completed, all the outside surfaces shall be painted with a good quality paint system, like Du-Pont, PPG, Standox etc. This shall be poly-urethane (PU) based paint with a life of minimum 10 years. The complete vehicle (all exterior surfaces) & monitor shall be painted with at least 2 coats of zinc phosphate primer each of 50 microns DFT & two coats of polyurethane finish paint each coat of 50 microns DFT. Further improvement on the paint may be carried out by the manufacturer beyond that mentioned above, to give better protection & surface finish. The color for the outside will be as per the latest international & Indian norms for fire brigade vehicles. The user name will be written on both-sides with yellow color. Water lines shall be painted with of zinc phosphate epoxy primer each of 50 microns DFT & two coats of polyurethane finished paint each coat of 50 microns DFT. Water lines shall be painted red in color. The bidder shall give the details of the entire painting process & also the details of in house painting facilities like paint booth etc. The color for the outside will be as per the latest international & Indian norms for fire brigade vehicles. The user name will be written on both-sides with yellow color. Reflective stripe(s) shall be affixed to the perimeter of the apparatus. The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total width & shall conform to the minimum requirements of ASTM D 4956, Standard Specification for Retro reflective Sheeting for Traffic Control, Type I, Class 1 or Class 3. At least 50 percent of the cab & body length on each side, at least 50 percent of the width of the rear, & at least 25 percent of the width of the front of the apparatus shall have the reflective material affixed to it. Owner's emblem in original colour together with name (in Hindi & English) as below shall be written in golden yellow colour on both sides of the vehicle. The inside of lockers shall be painted in pale cream / grey colour. Under frame of chassis shall be painted with chlorinated rubber paint. The appliance shall clearly have the following marks at suitable locations.

1. Manufacturer's name & trade mark.
2. Year of manufacture
3. Pump serial numbers & capacities.
4. Capacity of water tank & foam compound tank in litres.
5. Engine & chassis number.
6. All instrument control & valves shall be identified with properly itched metallic Name plates.



7. **Acceptance Tests:** The acceptance tests as mentioned below will be given to complete satisfaction of inspecting officers. Vendor shall ensure that design of tender will not affect chassis parameters such as speed, turning circle, acceleration etc. All inspections & tests shall be carried out by the vendor to the complete satisfaction of Client's representative, who shall have access at all reasonable times to vendor's works. All testing parameters shall be carried out at manufacturer's premises & details of infrastructure shall be provided with bid.
8. **Stability:** Stability of appliance will be such that when fully equipped & laden, if the surface on which the appliance stands is tilted to either side at an angle of 27° from horizontal it will not overturn.
9. **Gradient:** The vehicle will be tested on a gradient test ramp at an angle of 1:4. as per BIS.
10. **Endurance Test:** The pump will be tested for a continuous period of four hours non-stop & the water will not be replenished during this test & the engine will not show signs of overheating. This test will be offered at the pump manufacturer's workshop prior to shipment. The testing charges for the same shall be borne by the vendor.
11. **Priming Test:** The priming will be tested as per the latest standards & the system will be subjected to a test at a suction of 7 Mtrs. The priming shall be achieved in less than 23-24 seconds.
12. **Hydraulic Testing:** All the piping will be subjected to hydraulic test pressure of 15 Kg/cm² for a period of min. 10 minutes. The pump casing will be subjected to a hydraulic test pressure of a minimum 21 Kg/cm². In case of the high pressure section, it will be tested at 45 Kg/cm².
13. **Road Test:** After completion of all the above mentioned tests, a road test will be carried out where the vehicle will be tested as per the parameters laid down by the BIS. The braking, acceleration & top speed tests will be checked & recorded by the inspecting officers.

“Annexure A ”

Hand Operated Combi Tool: The HCT rescue tool shall be self-contained device with integrated hand pump. It shall be independent from outside power source & operated by a hand lever integrated in the tool. Pumping action shall be towards the object that is being cut enabling operator to use full force while using tool. It shall be hydraulically operated, lightweight & capable of being operated by one person. The handle shall be adjustable & foldable, shall rotate 180 deg in any direction & can be locked in any desired position. The tool shall conform to the following minimum specifications:

1. The min spreading force (tips closed position) shall not be less than 4.5 tons
2. Max. Spreading force shall not be less than 45 tons.
3. Spreading distance at the tips shall not be less than 280 mm.
4. Cutting (in the blade recess) not less than 24 mm steel bars.
5. Cutting opening shall not be less than 195 mm.
6. Maximum cutting force shall not be less than 25 tons.
7. Maximum squeezing force shall not be less than 4.5 Tons.
8. Weight of ready to use unit should not be more than 9 kg.
9. Blade arms must be serrated inside & outside.
10. The tool shall be capable of working from – 20 Deg C to + 55 Deg C
11. The tool shall be capable of working under water up to a depth of 40 Mtr.



(Schedule -7) Hydraulic Platform HLA (80 meters)

Technical Specifications:

GENERAL REQUIREMENT:

<p>The Hydraulic Platform shall be designed specifically for the purpose of fire fighting and rescue to enable firemen to go up over and above the other side of any obstruction. It shall comprise of main boom with Telescopic sections and Articulated Booms with Telescopic sections and cage mounted at the end of third boom and the entire unit shall be mounted on a Turn-Table on a Heavy Duty Diesel - Engine chassis of VOLVO or MERCEDES BENZ make, having five axles with two axles in the front and three axles in the rear, with fully factory built and furnished cabin, Right hand drive and suitable capacity PTO. The Vehicle Chassis shall be BS VI.</p>
<p>The Hydraulic Platform shall be designed as per the designed, operational stability and structural strength based on the criteria laid in DIN 15120 and EN 1777 or equivalent norms and standards applicable for elevated raised platforms used for Fire Fighting and rescue operations.</p>
<p>The Hydraulic Platform shall be capable of use at angle of 85 degrees of the first boom without any reduction of load capacity of the cage. It shall also rotate 360 degree when the 1st boom has been raised to the required working position as well as below ground level subject to boom remaining clear of vehicle body and or any obstruction.</p>
<p>The appliance shall be fast on the road and easily maneuverable. The overall dimensions shall not exceed the limits specified herein.</p>
<p>The working height of the Hydraulic Platform shall not be less than 81 mtrs from the Ground and the Horizontal outreach shall not be less than 30 mtrs. with 325 kg cage load or 27 mtrs with 500 kg cage load</p>
<p>The Hydraulic Platform shall be electro hydraulically controlled, permitting precise and easy operations under the most difficult conditions, with ample reserve strength and stability.</p>
<p>Full safety interlocks shall be incorporated in the design so as to ensure complete safety in operations and long years of reliable and trouble free service.</p>
<p>The design of the platform shall allow a very large safety margin for extreme operating and climatic conditions. The safe working loads ratings shall include an allowance for the weight of water system and the reaction from the monitor jet while operation.</p>
<p>The Vehicle shall have a leveling system to adjust axial and transverse movement to an angle not less than 5 degree and it shall be in automatic in nature.</p>
<p>There shall be a full back up system for all boom movements and outrigger movement in case of failure of main system.</p>
<p>The Complete Movement of the platform shall be computer controlled and the system shall be EMC tested for interference sensitivity.</p>
<p>The Control system of the platform shall be fully tropicalised and able to operate in the temperature range upto + 50 degree centigrade and in a dusty and Humid condition without reducing the maximum operating limits.</p>
<p><u>CHASSIS:</u></p>
<p>The Chassis shall be of VOLVO or MERCEDES BENZ make, 10x8X4, having suitable Wheel Base with fully factory built and furnished cabin and suitable capacity PTO. The Vehicle Chassis shall be a Right Hand Drive and shall be BS VI.</p>
<p>The Chassis shall be homologated from the appropriate authority in India in case not already an approved model.</p>
<p>The engine shall be six cylinders, inline, Diesel with direct injection, turbo charged with inter cooler.</p>
<p>The engine shall develop minimum 500 HP.</p>
<p>The gearbox shall be semi/fully Automatic with suitable Power Take Off to drive the hydraulic pump and Fire Pump.</p>
<p>Rear Axle shall be Tandem Bogie type with Hub reduction and differential lock between the wheels and</p>



axles along with Tag axles.		
Chassis frame shall be 'C' Channel section made of high strength steel with cross members.		
The Steering shall be integral power steering with collapsible steering wheel and column.		
The Front Suspension shall be leaf spring type and rear shall be combination of leaf spring and air suspension.		
The Brakes shall be dual circuit air brakes with parking brakes acting on rear wheels.		
Fuel Tank - Capacity shall be min 300 ltrs with lockable fuel cap.		
The Chassis shall be provided with Radial tires of suitable size as per load on axles with spare tyre.		
The chassis shall be provided with single day type cab with RED colour, made from high strength steel fully trimmed, external panels hot dip galvanized with hydraulic cab tilting mechanism. The Cab suspension shall be provided with coil spring and shock absorber. The cab shall be provided with adequate ventilation, rear view mirrors, windscreen and windows, adjustable driver seat, wiper system and along with all other standard fitments.		
The Electrical system shall be 24V, with suitable capacity batteries & Alternator for charging the batteries.		
The chassis shall be supplied with standard tool kit, hydraulic jack, operator & workshop manuals.		
The Chassis shall be fitted with suitable capacity Power Take Off Unit to drive the hydraulic pump for boom movements and Fire pump.		
The Chassis shall be directly procured by the tenderer confirming to above specifications and shall be got homologated with the appropriate authority in India. The Transportation responsibility of the chassis up to tenderers manufacturing facility lies with the tenderer.		
The Chassis shall comply all the provisions and enactment of Motor Vehicle Act 1988 and Central Motor Vehicle Rules 1989 and any amendment from time to time.		
<u>OPERATING REQUIREMENTS & DIMENSIONS OF FINISHED APPLIANCE :</u>		
The Vehicle shall comply the following requirements		
Working Height	:	81 mtrs min.
Height to working cage bottom	:	79 mtrs min.
Max Working Outreach	:	30 mtrs
Working outreach with at all heights from ground level to 40 m above ground level, min 500kg cage load	:	25 mtrs min.
Working reach below ground level	:	10.0 mtrs. approx.
Rotation - Continuous	:	360 degree
Safe working load in the cage on hard level Ground with dry monitor	:	500 Kg Minimum
Safe working load with monitor in the cage Delivery up-to 3800 LPM	:	360 Kg Minimum
Loading capacity of lifting eye under the Cage (cage empty)	:	500 Kg Minimum
Operations at maximum outreach with Full working load permitted in wind speed up-to	:	12.0Mtr/Sec. min.
Operating time at full stroke for all operations	:	As per standards
Overall length in traveling position	:	16.0 mtrs max
Overall width of the vehicle	:	2.55 mtrs max
Overall Height in traveling position	:	4.0 mtrs max
Maximum width of the vehicle when Jacks are fully extended on both sides	:	8.00 mtrs max.
Gross Vehicle Weight	:	50 tons max.
<u>CONSTRUCTION:</u>		
The appliance shall be robust in construction; materials used in construction shall be carefully selected for lightness and durability. Use of timber shall be restricted in bodywork and use of rubber shall be avoided as far as possible. Ferrous metal parts shall be treated for anti-corrosion by a method other than electro-plating.		



BOOMS:
The vehicle shall perform the following functions/ operations
Elevation
Depression
Extension & housing of telescopic sections
Rotation 360 degree in either direction
All the operations shall be electro-hydraulically operated with the help of hydraulic cylinders, wire ropes, chain etc. The system shall be purpose built to provide smooth takeoff, variable speed range and smooth slowdown, based on the criteria laid down under EN 1777 or any other relevant standards applicable for these kind of vehicles.
There shall be three booms, the first boom with telescopic extension providing direct movement upto approx. 85 degree and the second articulated boom with telescopic extension and vertical movement of approx. 158 degrees. The third boom shall adjust automatically and shall move 90 degree in relation to second boom movement. The booms shall provide an up-and-over capability throughout its vertical movement.
The booms shall be box/ trapezoidal section type, welded construction; welding method shall be of latest technology (preferably Plasma welding) to provide high durability and extreme accuracy. For high strength and minimum flexing of the boom sections only high tensile strength steels shall be used for load bearing structure.
The Boom welding shall be as per ISO 3834-2 quality. Welding quality certificate of ISO 3834-2 for load bearing steel structures for mobile hydraulic aerial appliances shall be submitted with the offer from an Independent agency.
The main boom elevation and lowering shall be controlled by two hydraulic cylinders that both have their separate safety devices and can alone carry the entire load in case of failure of any one of the cylinders.
All telescopic sections of the first boom shall move in a synchronized way and there shall not be any intermediate jerks during extension / retraction. Automatic slowdown mechanism at the beginning of the movement as well as end of the movement shall be provided to all boom movements. All the moving sections shall be fitted with adjustable guides/ rollers to provide smooth and accurate movement. Various maintenance points shall be located well at hand either outside the boom or behind easily removable covers.
All booms shall be internally and externally primed and painted for long life span, treated against rust and corrosion.
HYDRAULIC CYLINDERS:
The Hydraulic cylinders shall be double acting, fitted with lock valves so as to prevent booms, working cage from lowering or the outriggers from retracting in case of pipe or hose failure.
The cylinders shall be provided with automatic dampers to prevent the pressure shocks and shall dampen the movement when a mechanical stop is reached.
Retraction of the outriggers shall be automatically prevented as soon as the booms have been lifted up from their transport position by way of electrical OR Hydraulic interlock system.
The main boom elevation and lowering has to be controlled by two hydraulic cylinders that both have their separate safety devices and both can alone carry the entire load in case of failure of any one of the cylinders.
The piston rods of the jack cylinders have to be fully enclosed within rectangular steel profile in order to protect piston from damage caused by any external impacts.
Lifting of the booms from the transport position shall be prevented before the outriggers are in support position.
All the movements shall be automatically limited in their extreme position and the working cage shall be prevented from working outside of the permitted working range in any position.
An emergency stop switch shall be provided on both control panels, which shall switch off the hydraulic pressure of all movements and shall stop the vehicle engine. The unit shall be supplied with a manual Bleed Down System and Emergency Hydraulic Back-up System.



<u>TURN-TABLE:</u>
The turntable shall be fully integrated steel structure containing center post, slip rings, water line, etc duly fastened to the main frame by means of slewing ring.
The rotation for the turntable shall be controlled by hydraulic motor with brakes through oil immersed reduction unit.
The base control station shall be attached to the turntable so as to rotate with it and be accessible in all positions of the turntable.
The hydraulic distributor (center post) shall be mounted in the center of the turntable at an accessible position and shall carry the hydraulic pressure and return lines, electrical supply lines & water line allowing continuous rotation in either direction.
The fasteners retaining turntable to the rotation mechanism shall be of proper grade and shall be torqued properly.
The rotation gearbox fastener shall be of proper grade and torqued with proper backlash.
There shall be provision for the manual rotation of turntable in case of failure of hydraulic system.
Pins securing the hydraulic cylinders to boom and turntable shall be properly installed and secured.
The hydraulic hoses, tubings and connections provided in the turntable shall be free from kinks, chaffing or leaks.
<u>MAIN FRAME:</u>
The main frame shall be welded, preferably box section type made from high tensile steel plates and shall absorb all the stresses generated by platform and outriggers.
The front mounting bolts of the mainframe shall be spring loaded to allow the chassis frame to flex when the outriggers are fully down to avoid any stress concentration on the chassis frame.
The main frame shall incorporate hydraulic oil tank, outrigger beam housing, and it shall be bolted to the chassis frame and the slew ring support plate shall be welded to the top of the main frame and shall be precision machined.
The main frame is fixed onto the chassis frame with bolts in such a way that chassis performance and durability are maintained.
<u>STABILISING / JACKING SYSTEM:</u>
The Jacking system shall consist of hydraulically operated four outriggers mounted in their housings in the main frame. Each housing shall be fitted with adjustable guides to provide smooth and accurate movement of the outrigger beam. The outrigger piston rods shall be completely protected by closed steel profile.
The Jacks shall be telescopic H-type construction, each outrigger shall have two separate hydraulic cylinders, the first of which pushes the horizontal outrigger beam out and the second shall push the vertical Jack down.
The jack shall be provided with ground pressure sensors, which shall be correctly actuated before the booms are operated to ensure proper stabilization.
Each Vertical jack shall be provided with self-aligning footplate to spread the load evenly and allow the operation on uneven ground.
The Jacking shall be able to level the vehicle up to 7 degree sideways and fore and aft with automatic leveling system. There shall be manual override system.
The automatic jacking system shall be controlled preferably by hand held remote control box provided with back lit push buttons for following operations.
Left side outrigger beam out.
Right side outrigger beam out.
Automatic leveling
Outrigger back to transport position
The Jacking systems shall allow operating each jack individually and the jack projection shall be recognized by the controlling system.
The jacks shall be controlled individually or in pair with levers / push buttons and the control panel shall be situated in such a position that, the operator will have clear look to the right and left hand side while extending the jacks. The control panel shall be located at the rear side of the vehicle.
Yellow Flashing warning lights shall be provided at the outer most point of the jacks to identify the



position of the jacks during night operation.
Four wooden spreader plates shall be provided for the use, when the vehicle is to be operated on soft ground.
The Vehicle shall be provided with Digital inclinometer which will measure both fore, aft and Sideways inclination of the vehicle up to minimum 5 degree.
The Jacking system shall also have automatic "ONE BUTTON" jacking system with two independent automatically operating and self-controlling safety system to prevent an unsafe configuration.
The stabilizing system shall also incorporate axle-locking mechanism if required.
The Jacking / stabilizing system controlling box shall be located in such a way that it allows operator to see outrigger at all times preferably remote control box with wonder lead containing the push buttons for automatic jacking.
The available outreach to all directions must be shown on the outrigger display, before the outriggers are extended. This is to save time in an emergency situation, giving the operator the possibility to see the available outreach before setting up the machine.
The transversal and longitudinal angles of the chassis have to be shown on the display numerically before the outriggers are extended giving the operator the possibility to see whether the leveling capacity of the machine is sufficient without adding extra packing underneath the outriggers.
In addition, the following controls shall be provided on jack control panel:
Starting of chassis engine
Stopping of chassis engine
Activating the outrigger controls
Outrigger and outreach display with faultfinding system
Operating hour and rpm-up gauge in the display.
Switch for the battery driven back up for the hydraulic system
Visual indications for leveling of the vehicle (fore, aft & sideways)
Emergency stop
Controls for the automatic jacking
Engine start / stop button for diesel engine of standby system.
The locker containing outrigger controls shall be fitted with an automatically operating door switch and a light for night operation.
<u>ELECTRONIC SAFETY AND OUTREACH SYSTEM:</u>
The computer-controlled system shall allow to select the working cage load according to working situation, based on calculations and parameters saved in the system to guarantee exactly the same outreach regardless of the external influences like wind speed and direction, temperature, friction of the cylinders, etc.
The display units of the system shall show maximum possible outreach and position of the working cage in real-time along with other details.
The electronic system shall be approved according to the valid standards and directives. The system shall be EMC tested (EU directive 89/336/EEC) and CE type tested by TUV or any other appropriate agency.
<u>CAGE:</u>
The working cage shall be fixed to the boom with proper pivoting point preferably about one meter above the cage floor to provide highest possible degree of natural safety.
The cage shall be made of tubular steel / Aluminum / stainless steel profile, welded together and painted with special paint with high durability. The dimensions of the working cage shall be approx. 2.2 m (length) x 1.15 m (width) x 1.10 m (height) and it shall be fitted with an inward opening door located at suitable place to enable safe access to the cage. The top railing shall be part of the cage door so that entering into the cage without bending is possible. The rescue entrance shall be located in the front and top railing is formed for safe and easy access.
The cage shall be designed for 500Kg working load and shall be tested to 1.5 times the working load.
The cage load can be changed from display unit and the selection of load can be possible from turntable and cage control center. The chosen cage load can be displayed by clear symbols and numerically in selected format on all display units. The selected cage load shall be shown preferably by graphic bar.
When the load selection is made at turn table or cage the system shall automatically show the maximum



outreach to all directions with selected cage load and outrigger position.
The control panel in the cage shall be fitted in such a way that the operator shall see the booms clearly at all the times.
The cage shall be kept horizontally leveled in any position of the booms. An automatic hydraulic device shall control the leveling system with fully automatic and independent safety circuit in case of an uncontrolled leveling failure. There shall be a master switch for the automatic leveling system, so that it can be isolated and then manually controlled system activated.
The working cage shall have capability to turn minimum 45 degrees to each side from its center position. The movement shall be powered hydraulically with controls in the working cage and at the turntable control panels. The center position of the cage is indicated by a visual indication at both control panels.
At the front of the working cage there shall be a drop down rescue platform with automatically operating safety railing to provide additional safety during rescue and fire fighting. The dimensions of the rescue platform shall be approx. 1.36 m x 0.5 m with minimum 180Kg load carrying capacity.
HYDRAULIC SYSTEM:
The Hydraulic power shall be provided by a reliable and adequate capacity variable displacement double axial piston pump, which shall be driven by the vehicle power take off.
When no operation of the aerial device is activated, the pump shall rotate on minimum flow and minimum pressure. When one of the movements is operated the control valve automatically increases the pressure to a pre-set constant level and the oil flow to the amount that is needed for the movements activated. The flow of the pump shall be sufficient to give the supply of Hydraulic oil at required pressure to all the movements activated simultaneously at full stroke without affecting the preset speed.
There shall be a provision of instant couplings for attachment of manometer in each pressure line for checking pressure of each circuit.
The filtration system of the hydraulic oil shall consist of suction strainer in the suction line, pressure filters in each pressure circuit, return filter in return line and air filter on the reservoir. All the pressure filters shall have blockage indicator.
All hydraulic cylinders shall be double acting with hard chrome plated piston rods and shall be fastened by means of self-aligning ball bearings to prevent lateral forces from damaging the seals or piston rods of the cylinders.
Hydraulic oil tank shall be integrated or fitted into the main frame and shall have a proper heat dissipation system. The tank shall be fitted with oil level gauge, temperature gauge, and suction connections with closing valves for easy maintenance and draining outlet with closing valve.
The hydraulic oil cooler shall be provided and fitted at suitable place with electric fan controlled automatically depending upon the temp. of hydraulic oil. The design of the oil cooler shall be such that the temp. of hydraulic oil shall remain within manufacturer's limit when platform is being used continuously.
BACK-UP FOR THE HYDRAULIC SYSTEM:
There shall be a separate diesel engine of HATZ make, (silent pack) mounted at suitable place, preferably in one of the lockers driving the hydraulic pump, which will provide independent means of hydraulic power in case of failure of main engine of vehicle. The Diesel engine shall have sufficient power to drive all the movements of the booms but at a reduced speed. The Engine shall be able to start from all control panels.
In addition to the above, there shall be battery driven Hydraulic pump, which provides independent means of hydraulic power in case of failure of main engine and standby engine of vehicle. The battery pump can be operated from all control panels.
CONTROLS AND SAFETY:
The Electrical supply needed for control system shall be taken from the vehicle battery which shall be charged when the engine is running.
When the vehicle is in operation yellow flashing warning lights mounted on the outriggers shall automatically remain on.
The engine starting and stopping switch shall be provided on all control panels and the engine speed shall be increased to the present level as soon as any one of the control lever or dead man pedal is operated.



All boom and rotation movements shall be controlled electro-hydraulically by means of proportional valves. The proportional valve shall not be sensitive to changes of ambient or oil temperature, and shall provide smooth, safe and very accurate movements even in most severe operating conditions.
The speed of the first boom for lowering and extension shall be automatically reduced at maximum outreach. The first boom lifting speed shall be reduced before the maximum elevation.
All control movements can be performed by the control system from both control panels and the outreach can be selected by the positioning the outriggers. The variable system shall consist two displays, the graphical display and real time information about the outreach and the cage position and also to show possible movements according to cage position.
Signal lamps shall be provided for following functions:
For the outriggers, in transport position in driver's cab
For the outriggers working position on all control panels
For the P.T.O. engaged in the driver's cab
For the transport position of the booms in driver's cab
For the middle position of the rotation on the turntable and cage control panel.
For the exceeding of the safe working load in the cage on the turn- table and cage control panels.
<u>TURNTABLE AND CAGE CONTROL PANELS:</u>
The turntable control panel incorporating all control levers and safety system indicators shall be fitted with a rotatable arm (preferably) at the side of the turntable. The control panel shall be placed and locked conveniently in its operating position to provide the operator with an excellent view over the different indications of the safety systems.
The control panel can be rotated and locked in a position enabling direct access from the decking of the vehicle into control station.
The control station shall be fitted with convenient adjustable seat to provide comfort even in case of prolonged operation. The platform underneath the control position shall be covered by non-slip aluminum plate.
The control panels at turn table and cage shall be exactly alike which will reduce the risk of confusion amongst operators under stress or even panic. Both the control panels shall be provided with weather protection covers/ box.
The turntable control panel shall have a change over switch to select the control station from which the operation is performed.
Both control panels shall be fitted with following warning, indication, control devices, and shall be marked by clear symbols for easy recognition.
visual and audible indication for exceeding safe working load
visual warning for activation of working cage collision guard system
visual indication for ground pressure of the outriggers
visual indication for the center position of the booms
visual indication for the center position of the working cage
starting and stopping of chassis engine
switch for the operating battery driven pump for hydraulic back-up system
Starting and stopping switch for standby diesel engine for hydraulic back-up system
Joystick control levers for each movement
push button / joystick for cage slewing
emergency stop button
overriding of the automatic working cage leveling system
manual operation for the working cage leveling system
Switch for activating the bleed down system near the turn table control panel.
<u>CONTROLS AND INDICATORS IN DRIVERS CAB:</u>
The following control and indicators shall be provided in driver's cabin.
Visual warning for outriggers in traveling position
Visual warning for any of the equipment lockers being open



Visual warning for the booms not being fully in transportation position
Switch with visual indication for rotating beacons
Switch with visual indication for siren unit
Microphone for the public address system.
SAFETY DEVICES:
All the hydraulic cylinders shall be fitted with lock valves directly integrated into the cylinder structure to prevent the booms, the working cage or the outriggers from retracting in case of a pipe or hose failure.
Retracting of any of the outriggers shall be automatically prevented as soon as the booms have been lifted from their traveling position. Similarly lifting of the booms from the traveling position shall be prevented until the outriggers have reached the ground pressure.
The leveling system of the vehicle shall give audible warning at cage & ground level if permitted inclination increases due to changing ground conditions
All boom movements shall be limited at their most extreme positions making it impossible for the operator to reach an unsafe configuration by normal means of operation. The movements having direct influence on the stability of the vehicle shall be fitted with two separate limiting circuits, the first one retarding and stopping that particular movement, and the second one deactivating the whole electric and hydraulic system shall the first circuit fail.
All major movements such as lifting of the first boom to its maximum elevation, and extending the telescopic movement of the 1 st and 2 nd boom or moving the 2 nd boom at the maximum outreach shall be fitted with slow-down devices to provide smooth deceleration, and starting of the movement shall also be retarded for smooth acceleration.
An overload warning system shall be fitted to give an audible and visual warning in case of exceeding the safe working load in the cage and at the same time boom movements are slowed down and outward boom movements shall be stopped.
A cage collision guard shall be provided and shall be integrated to cage load sensor to provide additional safety when operating in darkness or in dense smoke. The system shall stop all movements.
An emergency stop button shall be provided on both control panels to provide immediate and complete “freezing” of all systems in case of an unexpected emergency.
All the control levers shall be “Dead Man” type and shall automatically come to zero position when released.
There shall be a “bleed down” system, which can be operated from turntable to lower the booms and bring the working cage down onto the ground even if no hydraulic pressure and electric is available with rotation mechanism.
When one of the outriggers has not enough ground pressure, the system shall give an audible and a visual alarm. If two outriggers lose ground contact, unsafe boom movements shall be stopped.
The safety system shall bring the working cage automatically to center position while lowering the boom in transport position.
The vehicle shall be equipped with electrical sensors for temperature and pressure of the Hydraulic oil. The temperature and pressure shall be shown on every display unit.
The vehicle shall be fitted with tilt alarm to give audible & visual alarm on display if the vehicle is leveled incorrectly. The tilt alarm angle shall be adjustable.
The system of the vehicle shall be based on clear and easy to understand symbols. If texts are used on master screens, the operator shall be able to change the language in use. All measure units of master screens shall be changeable to locally used format by operator.
The wind speed sensor shall be fixed in the working cage. The wind speed shall be shown on every display unit. When wind speed is higher than allowed the system shall give audible and visual alarm. The wind speed meter shall not limit the use of the platform.
BODY WORK AND EQUIPMENT LOCKERS:
The structure for the bodywork shall be made up of various Aluminium / stainless steel profiles properly fixed together by riveting, bolting or welding.
The complete external paneling of the rear body shall be made from Aluminium sheet fitted to the structural member either by gluing or riveting.



<p>The complete flooring of the rear deck shall be made from nonskid aluminium chequered plate properly riveted or bolted to the superstructure members.</p>
<p>For the easy access to the rear deck from ground level, there shall be sufficient nos of recessed steps on both sides of the vehicle provided with suitable grab handles.</p>
<p>Sufficient nos of lockers shall be provided on both side of the vehicle for keeping various accessories and equipments. The locker shall be so made that load distribution on both sides is equal. All the lockers shall be provided with rolling shutters properly sealed for water and dust ingress. All the doors of the lockers shall be fitted with automatic switches activating the light as soon as the door is opened and also activating the warning light in Drivers cab.</p>
<p>THE WATER SYSTEM:</p>
<p>The waterway shall be completely made of stainless steel / Aluminum. The nominal diameter of the water way shall be minimum 100 mm. There shall be one 2 ½” (63 mm) male inlet (as per BS standard) with a closing ball valve at each side at the rear of the vehicle from where the water line leads through the center post in the turntable up into the working cage where the water monitor is mounted. The telescopic water pipe shall be provided on the side of booms properly supported and protected with flexible pressure hose on the boom knuckles.</p>
<p>The water line shall be protected from possible over pressure by means of relief valves mounted underneath of the turntable.</p>
<p>A Telescopic water pipe shall be provided on the side of the booms, which shall be made of stainless steel/ Aluminum. Moving sections of this pipe shall be externally ground & chromium plated for long life. Seals between the sections are of low friction type and can be easily tightened if so required. On the other booms a fixed stainless steel pipe shall be installed and at the boom pivoting points, flexible and specially reinforced pressure hose shall be used. All hoses shall be fixed to the pipe with reliable span-lock connections.</p>
<p>An additional outlet of 63mm (as per BS standard) with female coupling and closing ball valve shall be provided to the water piping in the cage. There shall be drain cocks fitted in the piping to enable to drain the water from the piping after use.</p>
<p>On the front side of the cage underneath, a nozzle shall be provided for water spray curtain system to protect the cage occupants from radiant heat. Control valve of water spray curtain system shall be located inside the cage.</p>
<p>There shall be hose reel mounted on the side of the cage with 20 m X 1” dia hose with Fog/Jet nozzle. The hose reel shall be provided all the valves and fittings in the cage.</p>
<p>WATER MONITOR:</p>
<p>Water monitor shall be connected to the piping system and shall be mounted outside the cage in a suitable position so that the entire cage floor area can be fully utilized in extreme rescue situations. Monitor shall be hydraulically operated from turn table or cage control panel with manual override system.</p>
<p>The monitor shall be made of light alloy and fitted with jet / fog nozzle of Akron/ TFT/ Elkart make with maximum capacity of 3800 LPM.</p>
<p>The Monitor shall have Horizontal rotational movement to left and right side And also vertical up and down movement.</p>
<p>There shall be ball valve type control valve for the monitor and the monitor shall be manually operated. 4 x 63 mm delivery inlets (2 on each side) as per BS standards. 100 mm dia line going to the work cage</p>
<p>INTER COMMUNICATION SYSTEM:</p>
<p>There shall be fully transistorized talk back inter communication system fitted between turntable and the cage.</p>
<p>The system shall be combined microphone and loudspeaker for hands free operation and shall be located in the cage. The turntable control station is also equipped with microphone, which shall be integrated in the loudspeaker with volume control.</p>
<p>The microphone and the loudspeaker shall be sealed properly and it shall be protected from the ingress of water, dust and humidity.</p>



In addition to above there shall be two VHF walki-Talki sets fitted in the cage and on turn table of Motorola or equivalent make. The set shall be tuned to fire brigade frequency and shall be completely water proof and dust proof confirming to IP 67 standards. The licensing for this VHF sets shall be the responsibility of supplier.

ELECTRIC SYSTEM:

The electrical supply shall be taken from the vehicle batteries, which are kept charged when the engine is running. Voltage of the system shall be 24 V DC and all circuits shall be provided with specific fuses depending on the current consumption of that circuit.

When the main current is switched on, yellow flashing warning lights located at each outrigger and booms pivoting point and underneath of the working cage shall automatically be switched on.

2x 24 volts, 30watts, Xenon lights with swivel mounting bracket shall be fitted At the cage railing in the front side to provide extra safety during night operation. The switch for these lights shall either be provided on the light itself or on both the control panels.

Two rotating beacon lights shall be provided on each side of the drivers cab roof with Amber colour lens. The switch for switching the beacons on and off with suitable signal light shall be integrated in the control panel of siren cum public address system.

SIREN AND PUBLIC ADDRESS SYSTEM:

There shall be an electric siren unit fitted on the roof of the vehicle cabin or at a suitable place with the control unit mounted conveniently inside the driver cabin. It shall have the fast (yelp) and slow (wail) sound modes with integrated switch for rotating beacon lights.

Command microphone, which is fitted with push-to-talk switch, allows the Public address message to override the siren function. Operations are possible from drivers cabin.

DIGITAL DISPLAY UNIT:

The vehicle shall be provided with 3 full colour LCD displays situated at outrigger center, at turntable and the cage control panel.

The display shall have following features:

Type	:	TFT technology, transfective.
Size	:	Min 6.5 inches
Configuration	:	396x232 RGB pixel, full colours
Push buttons	:	Multifunctional Membrane type
Warning Lights	:	LED's / Lamps
Backlight	:	Suitably illuminated for night operation & shall have good visibility in broad daylight.

The display shall show the location of the fault if occurred in the system while operating the vehicle.

The control system of the vehicle shall have self-fault finding system. If any fault occurs during the operation, the system shall find out the same and shall show the location of the defective component on the display. The system shall incorporate simple test screens to enable testing of the working cage and the turntable control panels. The tests shall also cover display unit, push buttons, joysticks and control lamps.

For maintenance purposes the following tools shall be provided as standard supply:

Fault finding system and fault register

Status screens for sensors, switches, hydraulic valves, control lamps, etc.

Total operation and hour meters.

Operation and hour meter since last service

Service counters and alarm for general maintenance.

Software verification management

Compatible software relevant to the system.



<u>FAULT FINDING SYSTEM:</u>		
The control system of the vehicle shall have self-fault finding system. If any fault occurs during the operation, the system shall find out the same and shall show the location of the defective component on the display. The system shall incorporate simple test screens to enable testing of the working cage and the turntable control panels. The tests shall also cover display unit, push buttons, and joysticks.		
For maintenance purposes the following tools shall be provided as standard supply:		
Fault finding system and fault register		
Status screens for sensors, switches, hydraulic valves, control lamps, etc.		
Total operation and hour meters.		
Operation and hour meter since last service		
Service counters and alarm for general maintenance		
Software verification management		
<u>PAINTING:</u>		
Before painting all surfaces of steel structures shall be carefully shot blasted after which they shall be primed and then applied the coat of approved paint. The final paint thickness of the paint film shall not be less than 100 microns. All the booms shall also be painted from inside.		
For very high corrosion resistance of hollow structures such as steel profiles of the working cage, booms, outrigger beams and housings shall be treated with anti- corrosion protection preferably with “TECTYL”.		
The following Paint shades shall be used:		
Working cage & wheel rims	:	White aluminum RAL 9006
Working cage support, boom Sections, Turntable and related Cylinders	:	White RAL 9010
Main frame, outriggers and Body work including cabin	:	Red RAL 3000
Chassis frame touch-ups	:	Chassis original tone
The word “ _____ FIRE BRIGADE” shall be painted on both side of the vehicle at suitable place as per the instructions of the Chief Fire Officer.		
The emblem of _____ FIRE BRIGADE shall be painted on both side of the vehicle in Natural colour		
<u>ACCESSORIES:</u>		
Wooden outrigger ground pads/ plates with brackets	:	4 Nos
Working range diagrams, at turntable & in the cage	:	2 Nos
Marking of safe working load in the cage	:	1 No
Unit type marked at the boom	:	2 Nos
Warning labels and instruction plates	:	1 set
Operation and maintenance manual for HP, Chassis, standby diesel engine	:	2 sets
Plug for 24 V working light at the turntable and in the working cage	:	1 No
Lifting hook under the working cage, capacity 500 kg	:	1 No
Hydraulic pressure gauge	:	2 No
Set of tools & accessories required for the repairs & maintenance of HP, chassis, & other systems	:	1set
Safety belts for cage occupants	:	5 Nos.
Loadman, portable device for measuring the bearing capacity of ground.	:	1 No.
Radio remote control for boom and water monitor Operation	:	1 set
Reversing camera on both rear sides with 6” display in cab.	:	1 set
Winch in the cage for material, 80 metres cable 300 kgs. Capacity.	:	1 set
Auto pulley with harness at both rope ends for rescue 80 metres Rope and 150 kg working load capacity.	:	1 set
Xenon work lights 24V/ 100 watts with yellow glass at the cage.	:	2 No
Hydraulic pressure intensifier for hydraulic tools 720 bar.	:	1 set
Electronic ultra sensor impact control system.	:	1 set

SIGNATURE & STAMP OF BIDDER



Rotating beacon on rear deck.		2 Nos
Return oil filters service indicator.		1 set
Pressure gauge for water pressure at monitor		1 No
LED ultra bright blinkers on and around the cage and vehicle.		8 Nos
<u>INSTRUCTION MANUALS:</u>		
Two sets of complete instruction manual for the operation and maintenance of Hydraulic Platform unit (including all systems), stand by systems, chassis and itemized spare parts list shall be supplied along with electrical circuit diagrams, hydraulic circuit diagrams.		
All the manuals, circuit diagrams, literature etc shall be in English language.		
<u>DRAWINGS:</u>		
The complete detailed drawings of Hydraulic Platform duly mounted on chassis specified herein shall be submitted along with the tender.		
The working range diagram along-with all the details shall also be submitted along with the tender.		
<u>STABILITY:</u>		
The stability of the vehicle (in traveling position) when fully equipped and loaded (excluding crew member), with hydraulic platform resting on the resting stand and without extending the stabilizing jacks shall be calculated theoretically and certificate to that effect shall be submitted along with the vehicle.		
<u>TRAINING:</u>		
The manufacturer's service engineer shall undertake the training for a week in the operation and maintenance of the Hydraulic Platform for the operational staff of the Fire Brigade at Fire Brigade Headquarters. Cost on this account shall be included in the offer.		
The training regarding the operation and handling of the vehicle for 5 officers of fire brigade dept. shall be conducted at the manufacturer's factory for minimum period of one week. The cost on account of this training shall be included in the offer.		
<u>WARRANTY:</u>		
The manufacturer/ supplier shall furnish a warranty for the complete unit including chassis for period of 12 months from the date of acceptance of the vehicle at the Fire Brigade Headquarters		
The manufacturer shall also guarantee for the supply of spare parts & service for chassis and Hydraulic Platform including all systems for a minimum period of 10 years from the date of supply of the vehicle.		
<u>R. T. O. REQUIREMENTS:</u>		
The vehicle shall be equipped with all the accessories required for registration of the vehicle and shall conforms to Motor Vehicle Act 1988 and Central Motor Vehicle Rules, 1989 or any amendment incorporated from time to time.		
<u>DEVIATION:</u>		
Any deviation / departure from the above specification shall be pointed out separately with detailed explanation.		
<u>GENERAL:</u>		
Any additional information or clarification required can be given on application to the Chief Fire Officer,		
<u>INSPECTION:</u>		
The Chief Fire Officer and the engineer of the fire brigade department or their authorized representative by GSDMA will carry out the inspection and the testing of the fully built vehicle at the factory premises of the vehicle manufacturer prior to dispatch. The traveling and accommodation cost shall be included in the basic cost of the vehicle.		
It is obligatory to the supplier to provide all the assistance and equipment for the inspection and testing of the vehicle at their premises.		



(Schedule – 8) SCBA training Gallery

Tender Specifications:

Description	Qty.
<p>CONTROL ROOM AND SAFETY SYSTEMS The exercise progress can be continually controlled, monitored and analyzed from the control room. Security facilities such as ventilation, security cameras, position indicator, emergency-Stop and removable lattices provide the highest possible Safety for the trainees. The component of control room and safety system are as follows:</p>	
<p>Control desk: Control desk will be used for central control and monitoring, made up of the following system modules:</p>	
<p>Basic unit: Desk frame with following specifications: Paintwork textured finish, Brilliant blue, with three-section top at desk height, Mains supply with main switch 100 A, earthing Contact-type socket for service work, transformers for control Voltages: 220V and 24 V as per system requirement.</p>	1 No.
<p>Clock : Digital clock with LED display, integrated in control board.</p>	1 No.
<p>Temperature Measuring System</p>	
<p>Temperature indicators For ambient temperature monitoring and heating zone temperature controlling Digital, with LED digits Installation: in control board</p>	
<p>Ambient-temperature sensor Type: RTD, Range : 0 to 100 Degree C (min) Installation: training area</p>	1 No.
<p>Radiant heat sensor Special design with resistance indicator Type: RTD, Range: 0 to 100 Degree C (min) Installation: training area</p>	1 No.
<p>Room Lighting Consist of following:</p>	
<p>Room lighting control system During training switching is effected from control desk, Installation: in control desk</p>	1 No.
<p>Acoustic Monitoring System</p>	
<p>Announcement System With microphone and loudspeaker Includes a facility to stop working noise system for messages Output 25 W, Installation: in control desk.</p>	1 No.
<p>Intercom (stations) For connecting five stations Equipped with individual speak and call mode, choice of station switch, total 4 instruments Installation: one in Control desk and others on training area</p>	1 No.
<p>Television Monitoring System</p>	



Screen diagonal: min. 7 “ Installation: Control desk	1 No.
Circuit for desk monitor Fuse contactor and luminous switch, with connection to lamp test circuit, for	1 No.
Supply of desk monitor and cameras. Installation: in control panel.	
Spotlight Installation: in training room	1 Set
Switching unit for Spotlight Installation: in control desk	1 Set
IR CCTV cameras with swivel head With Built in min 8 pc LED Effective range up to 10 meters Will confirm to IP67	4 Nos.
Switching unit for large-screen monitor With video change-over switch, via which each of the scenes depicted on the desk monitors can be switched to the large-screen monitor and recorded on the video recorder. Installation: in control desk	1 No.
Switching unit for reproduction on desk monitor With video change-over switch, via which each of the scenes depicted on the desk monitors can be recorded on the video recorder. Replay via one of the desk monitors. Installation: in control desk	1 No.
Large-screen monitor With min. 43” picture tube diagonal, for video input signal, Installation: in control room	1 No.
Video recorder For recording and replay of training sessions System: CD player complete, including Compact disk. Installation: in control desk	1 No.
Orientation aid	
Orientation light For giving light signals when training in darkness and fog, with bulb 24 V colourless cap and tool holder, for fitting in assembly grid of orientation section, movable. Installation: in Training room with on off switch	4 Nos.
Ventilation system Exhaust Air supply	2 Nos.
Distress Signal Unit	4 Nos.
SIMULATION EQUIPMENT In exercise labyrinths across several levels with many different training elements, orientation and resilience are practiced. Additional effects like smoke, background noises and darkness create realistic surroundings and test psychological resilience.	
HEAT SIMULATOR	
Hot zone Rating: 10 kW, comprising solid support made of steel profile, with tension brackets for fixing on supports of orientation section, overhang 350 mm. Installation: in Training room	1 Set



<p>Switching facility for hot zone 10 kW, 2 stages Installation: in control desk</p>	1 No.
<p>Protection cover Suitable for hot zone 6 kW and 10 kW Back elevation: steel plate, painted matt black, Front: corrugated lattice, painted matt black Installation: in Training room</p>	1 No.
<p>Smoke Generation unit</p>	
<p>Smoke Machine For Mobile and Stationary use in the training room to produce artificial harmless fog with remote control. Installation: in training room.</p>	1 No.
<p>Switching facility for Smoke generator Installation: in control desk</p>	1 No.
<p>Noise Unit</p>	
<p>Control unit For noise system with Disk recorder, power pack and noise disk. Installation: In control desk</p>	1 No.
<p>Loudspeaker for noise unit Capacity: min 10 W Installation: in Training room</p>	2 Nos.
<p>Light Effect Unit</p>	
<p>Control element for light-effect unit With mains switch and three-port lighting console for connection to disk player. Installation: in control panel</p>	1 No.
<p>TRAINING AREA The training program offers different levels of difficulty and can be adjusted to the different physical abilities of the test persons. The maze order can be easily adjusted by simply changing the individual lattice elements. The training course Thus offers ever new training conditions.</p>	
<p>Orientation section Minimum 32 m crawl section, storey height 1000 mm (+/_ 10mm) and minimum 32 m walking section, storey height 2000 mm, (+/_ 10mm) grid size 1000 x 1000mm (+/_ 10mm) free-standing, with diagonal bracing, made up of system modules comprising:</p>	
<p>Support 1000/2000 for one creep section with storey height 1000mm (+/_ 10mm) and one walk section with storey height 2000mm (+/_ 10mm) with tubular spacers made of steel 40 x 40 x 1.5 mm, galvanized, transfer joints with eight holes for fitting floor panels, assembly grids and obstacles, threaded feet for height adjustment and connecting elements for horizontal bracing.</p>	1 Set
<p>Floor panel 32 mm thick chipboard, as well as support profiles and diagonal ties made of steel for fitting in transfer joints</p>	1 Set
<p>Assembly grid 1000 For fitting in orientation section, for storey height 1000 mm. Square profile frame 25 x 1.5 mm, corrugated lattice 50 x 50 x 4, and steel, primed, painted matt black.</p>	1 Set



<p>Assembly grid 2000 for fitting in orientation section, for storey height 2000 mm. Square profile frame 25 x 1.5 mm, corrugated lattice 50 x 50 x 4, steel, primed, painted matt black.</p>	1 Set
<p>Wall bracing For solid fixing of orientation section at surrounding walls, with adjustable bar, steel, galvanized, 20 x 1 mm</p>	1 Set
<p>Obstacles</p>	
<p>Obstacle "manhole 1000" Perpendicular, for fitting in orientation section in same manner as assembly grid, for storey height 1000 mm, manhole diameter 600 mm, with locking element to prevent lifting out, steel, primed, painted matt black.</p>	1 No.
<p>Obstacle "crawling pipe" 3500 mm long, with two assembly frames for fitting in orientation section, for storey height 1000 mm contact-making via two floor panels, locking element to prevent lifting out, and steel, primed, painted matt black.</p>	2 Nos.
<p>Obstacle "casement door" Perpendicular - for fitting in orientation section in same manner as assembly grid, for Storey height 1000 mm, steel, left-hand hinges with two casement fasteners, handles on either side, locking element to prevent lifting out. Steel, primed, painted.</p>	1 No.
<p>Obstacle sliding door Including lattice partition with rods, for fitting perpendicularly into orientation section, for storey height 1000 mm. Frame covers two sections so that opening one passage simultaneously closes the adjacent passage. Steel, primed, painted matt black. Frame: Square profile 25 x 1.5 mm with corrugated lattice.</p>	1 No.
<p>Obstacle "inclined plane" Can be hung into the orientation route as connection between the walking- and the crawling section. Waterproof chipboard, 32 mm.</p>	1 No.
<p>Obstacle "pass through" For usage in the orientation section, instead of a floor panel, Flake board, 32 mm thick, waterproof, manhole dia 600 mm with edge profile lid and a grab handle up and down for each closing by hand, after opening support profiles are made of steel for hanging into the strut attachment fittings.</p>	1 No.
<p>Obstacle grid H (horizontal half) Upper half filled with corrugated lattice 50 x 50 x 4 mm For fitting in orientation section with storey heights of 1000mm (+/_ 10mm), square profile frame 25 x 1,5 mm Including fixing buckles. Steel, primed, painted matt black.</p>	1 No.
<p>Obstacle grid HU (horizontal half) Lower half filled with corrugated lattice 50 x 50 x 4 mm For fitting in orientation section, for storey height 1000mm (+/_ 10mm), Square profile frame 25 x 1,5 mm Including fixing buckles. Steel, primed; Painted matt black</p>	1 No.
<p>Obstacle grid V (vertical half) Can be hung in the orientation route for a floor height of 1000 mm (+/_ 10mm), Square profile frame 25 x 1,5 mm, half size perpendicular filled with corrugated lattice 50 x 50 x 4 mm. Including fixing buckles. Steel, primed Painted matt black</p>	1 No.
<p>Obstacle grid D (diagonal half) Can be hung in the orientation route for a floor height of 900 or 1000 mm. Square profile frame 25 x 1.5 mm, half size perpendicular filled with corrugated lattice 50 x 50 x 4 mm. including fixing buckles; Steel, primed, painted matt black</p>	1 No.



Intermediate profile To fasten the obstacle elements in walking section. Steel, primed, painted matt black	1 Set
WORK ROOM: To finish off the training, an exercise room to be installed with following work equipment	
Endless Ladder Desired specifications are: Frame :Welded Tubular Steel Weight : 260 lb. Size :H:65.5” / W:31.25”/ L:76” Power : 115 V /AC / 5 Watts (computer)	1 No.
Treadmill Desired specifications are: <input type="checkbox"/> Belt Speed: 0~16Km (Opt 20 Km) <input type="checkbox"/> Motor: 3 HP AC motor <input type="checkbox"/> Walking Area: 580mm x 1700mm <input type="checkbox"/> Power Incline: 0~10% (Opt 20%) <input type="checkbox"/> User Capacity: 240 Kg <input type="checkbox"/> Power Dedicated: 230V, 50 Hz 15A, 1Ø <input type="checkbox"/> Floor Space (approx.) 2240mm x 940mm(88" x 37")	1 No.
Work Machine Desired specifications are: <input type="checkbox"/> Capacity : max load 50 kgs <input type="checkbox"/> Movement : 1 – 2 mtrs <input type="checkbox"/> Arrangement for seating	1 No.
Stationary bicycle Desired specifications are: Digital Display which shows time, speed, calorie count, pulse rate etc.	1 No.
Note : a) A RCC room of internal dimension 15.3 x 12.5 x3.4 meter height will be provided at GIFT City Fire Station into which the BA Gallery as per the given spec & lay out drawing to be installed.	

- b) The B.A. Gallery will have Training room, Control room and work space to accommodate work machineries as per the given spec.
- c) Internal partitions of all rooms to be made with light weight rigid frame and standard partition material.
- d) Only the training room will be a dark room.
- e) Refer layout drawing attached.

SITE REQUIREMENT TO BE PROVIDED BY GSDMA at GIFT City Fire station
The RCC room to have 100 amp standard electricity, 230 / 440 VAC with proper distribution panel.

The Free electricity to be provided by GSDMA at site for the installation of the B.A. Gallery



DOCUMENTATION AND TRAINING:

Operation manual

Manual shall be supplied containing the details of operating and maintenance procedure with proper layout diagrams.

Project Drawings

General Arrangement – Final site layout shall be submitted with the offer.

Warranty Period

One year warranty shall be provided for all items supplied under the terms of this Contract, this warranty period shall commence on the day immediately following that of the successful customer acceptance test.



(Schedule-9) Foam Nurser

Technical Specifications:

Overview: The Foam Nurser shall be designed & manufactured in compliance with specifications given below, relevant Indian/International standards (wherever applicable) & as per sound engineering practices. It shall be designed to effectively & efficiently carry 12,000 Liters of Foam, a pump with a discharge capacity of 500 LPM@12 Bar, driven through a suitable Power Take Off (PTO) unit, a Foam Monitor of approximately 6000 LPM (to be used through hydrant supply), equipment, accessories, etc. which will be fixed on appliance in a compact, neat & ergonomic manner & will be easily & readily accessible for immediate use during emergencies. Due care shall be taken to ensure that all aggregates are designed for ease & comfort of the operator.

Chassis: The Foam Nurser will be fabricated on a suitable 25 Ton (6X4) BS-VI chassis with minimum 300 BHP to be procured by fabricator on behalf of the client. Payment for chassis shall be done by the client on submission of a Performa Invoice of chassis manufacturer, & an Indemnity Bond of equivalent value by the supplier. Chassis shall have an OEM fitted fully automatic transmission with torque convertor. In case the chassis is not available with an automatic transmission from the chassis OEM, it shall be retrofitted by fabricator through an authorized dealer of the transmission. Drag hook or eye of adequate strength & design will be provided at the front & rear of the chassis.

Design & Construction: The Foam Nurser shall be designed to be as compact as possible with ease of accessibility to all service parts. Pump & other equipment controls shall be so arranged that user can operate them easily & conveniently. Lever type valves shall be preferred unless impractical in any way. Material of construction shall be used with a view to combine lightness with strength & durability. No form of wood, shall be used anywhere. All parts which form water ways, come in contact with water/foam or are made from materials prone to corrosion, shall be treated with a good quality anti-corrosion system/treatment/paint/zinc coating etc. Vendor shall submit the weight distribution chart, design of supporting structure along with design calculations with the technical bid, failing which the offer is liable for rejection.

Foam Pump: The pump to handle Foam Compound (AFFF/Multi Purpose AFFF) will be rotary gear type. The pump will be driven by chassis engine through PTO & will meet following specifications.

- Rating*** : 500 LPM at 12 bar discharge pressure.
- Priming*** : Self-priming and capable to lift foam from barrels kept on ground.
- Materials*** : Casing, shaft & parts in contact with foam will be SS-316 excl. gears (SS AISI-410)
- Gears*** : Double helical, hardened and profile ground.
- Bearings*** : GM & Teflon's bush bearing (Replaceable type).
- Seal*** : Mechanical seal.
- Relief Valve*** : External to pump with body & trim of SS-316. PSV discharge shall go to tank.

The pump will have a bypass line for manual recirculation of foam to foam tank & will be used for transferring foam from tank to other tenders and foam from jerry cans to foam tank on chassis. The pump will take suction from tank by gravity as well as through any one of the inlet connections provided on the side for picking up foam from jerry cans. The pump delivery will be routed to a hose reel fitted at a suitable place (with 25 Mtrs. Hose) for supplying foam to other tenders. It will also be routed to two male connections of 50mm (One on each side), for transfer to other tenders

Foam Tank: The Foam tank shall be of 12000 Ltrs. of SS 316L, 6mm thick all around except top and baffles which shall be of 5mm. Tank shall be die-pressed on all sides. Wherever butt joints are unavoidable, they shall be radiographically tested. All other joints shall be DP tested for soundness of weld. Welding shall be done using only TIG welding process using compatible electrodes. The tank will be baffled to prevent surge. Baffle plates shall be bolted.



All fasteners shall be of SS and the nuts shall be tack welded. The tank shall be mounted on metacones. Suitable lifting eyes shall be provided on top of the tank for maintenance. The tank shall have a filling orifice of 150mm & an inspection & maintenance manhole of 450mm. The cover will be marked "FOAM". A 50mm diameter drain line will also be provided for maintenance / repairs etc. A cleaning hole of 250mm will be provided at the bottom. Tank shall be fitted with sludge trap. Bottom of the tank will have a slight slope towards the sludge trap. The tank shall be provided with an automatic venting facility. Tank shall be hydraulically tested at 0.5 kg/cm². All plumbing shall be reasonably accessible for maintenance purposes. Screwed bends, joints shall be avoided. All joints will be flanged & have 'O' ring sealing. All outlets / inlets from tank shall be done by installing nozzles with reinforcement pads. Tank will have following provisions & connections:

1. 50mm dia over flow (SS-316L).
2. Two suitably sized breathers for removal of air during filling and pumping out.
3. Sludge trap with ball valve & piping. Tank bottom sloped towards sludge trap.
4. Foam level indicator (Non sticking type gauge glass) duly calibrated.
5. Drain valve (Dia 50mm) with 63mm instant male coupling on the side of Nurser (SS-316L).
6. A dip hatch with calibrated dip stick. Calibration chart will be provided by the vendor.
7. Suitable ladder for climbing on the top of tank.
8. All nozzles in tank will have suitable reinforcement pads.
9. Nozzles will also have adequate stiffeners to take load from piping.

Power Take Off: The PTO for driving the pump shall be taken off the automatic transmission & shall be of suitable make & ratio for the rated output of the pump & torque of the drive train. The lever/switch for engaging the PTO will be provided in driver's cabin. Necessary modifications, to the standard drive system as available on the chassis, shall have to be done by the vendor so as to adopt the PTO unit in the system. Necessary supports for PTO Unit, propeller shaft coupling, universal joints etc. for power input to & output from PTO Unit shall be provided by vendor. The drive assembly components (shafts, coupling etc.) shall be dynamically balanced & vibration at any of the rotary parts shall be minimized.

Integrated Pump Control Panel: The fire pump & foam pump controls shall be fitted with electro-pneumatic valves, controlled by a central J1939 CANBUS system. ***It shall be possible to engage PTO/s from control panel without having to go into the driver's cabin.*** Tank to pump, deliveries, monitor, etc, shall be controlled by soft touch switches in control panel. A 12.5 LCD/TFT display shall show all operations in real time. Further the CANBUS system shall incorporate a real time flow diagram showing flow of water/foam/premix solution depending on position of valves opened. A repeater 7" LCD / TFT display shall be provided in the cabin for lead firemen to monitor the situation. Panel supply voltage shall be regulated from battery voltage fluctuations through separate isolated power supply. Power supply shall be indicative of Battery Voltage OK, Reverse connection & Active output through designated LEDs. Apart from pneumatically controlled CANBUS, an arrangement for manual override for different valves or operations required during fire-fighting shall be provided in a panel. Manual override panel shall be provided at an accessible location in such a way that it can be easily operated in case of malfunction of pneumatic CANBUS without difficulty. System shall have:

Monitoring Parameters:

- a) Pump Hour Meter
- b) Pressure Indication for either of the pumps in operation.
- d) Engine Coolant Temperature
- e) Pump/s RPM Indication
- f) Foam Level Subsystem
 - o Bar Type Display
 - o 100 level resolution with Percentage
 - o Special markers for Empty, 1/4, 1/2, 3/4 & Full
 - o Real time Tank Volume Indication in Litres
 - i) Audio/visual alarm once water/foam level is below pre-set volume to avoid dry running.



- j) Emergency call bell for Drivers Cabin.
- k) Auxiliary Lighting Control for Pump Room Light & Spot Light
- l) Logo of the Purchasing Department shall be Included on the welcome screen.
- m) The Front Bezel of the Control Panel shall be IP65 rated
- n) Panel shall have Multiple Language option i.e. Hindi & English

Pipelines & Valves: The complete pipeline circuit on the vehicle including fittings will be of SS316 material only. All valves up to 2” size will be lever operated ball valves & all valves above 2” size shall be butterfly valves. Seats of the valves shall be easily replaceable, readily available. All the lines shall be tested hydraulically for at least 3 times the working pressure or 1.5 times the working pressure of the pump. A complete flow chart & schematic diagram including the testing parameters shall be submitted with technical bid failing which the bid shall be rejected.

Remote Controlled Monitor: A remote controlled monitor shall be installed on top of the vehicle at a suitable location. The monitor shall operate on 12 or 24 volt DC & shall be controlled by a monitor mounted switch panel with functions that control rotation, elevation, nozzle patterns, & programmable park & oscillate. Monitor shall be compatible with wired & wireless control stations & monitor position display. Electrical components for the monitor shall be waterproof & utilize current limiting & position encoders to protect the drive train at the ends of travel. Monitor shall have ultra-flex robotic power cable & include a cable guide for 450 degrees of monitor rotation. The monitor shall be equipped with manual override knobs in event of power failure. The monitor shall have full horizontal rotation with travel 225 degrees left & right of center, 135 degrees of vertical travel with stops at 90 degrees above horizontal & 45 degrees below horizontal, field changeable rotation stops at 45, 90 & 135 degrees left and/or right of center & 45 degrees above and/or 30 degrees below horizontal, flow capability of 0-6000 LPM with 1.2 bar loss & a maximum operating pressure of 14 bar. Monitor shall be resistant to corrosion. Throw of monitor shall be minimum 80 Mtrs. Pumped through 6 external hydrant inlets. The nozzle of the monitor shall be automatic with electrically operated pattern control. ***It shall be able to flush without shutting the flow. The nozzle shall have aluminium bumper and not a rubber bumper.*** It shall allow for straight stream as well as wide fog patterns. The nozzle shall have a flow capability of 6000 LPM at user adjustable pressure of 70 PSI to 120 PSI. User shall have the ability to change nozzle operating pressure by means of an adjustment knob with pressure indicator on front of nozzle. Electric drive unit shall develop min. 400 pounds of torque, & shall be enclosed in a waterproof cast aluminium housing which will have a manual override device during power failure. Unit shall be compatible with 12 or 24 volt power systems. Nozzle stream shaper shall have position encoder for smooth transition between straight stream & fog pattern. Nozzle shall be connected to monitor through a waterproof electrical connection. The complete set (monitor & nozzle) shall be guaranteed for 5 years & shall be of TFT / Akron / Elkhart make only. The guarantee shall be provided with the bidding documents, failing which offer is liable for rejection. Monitor & nozzle shall be guaranteed for 5 years & shall be of TFT/Akron / Elkhart make only. The guarantee shall be provided with the bidding documents, failing which offer is liable for rejection.

Cabin: Enclosed accommodation for driver and officer in charge shall be provided in the OEM provided cabin. Driver will be provided with large size rear view mirrors on both sides of the cab & convex round mirrors for overall rear view of the vehicle from top to bottom & left to right. A First aid box shall be mounted in the cabin at easily accessible location. An approval in writing of chassis OEM shall be provided with the bidding documents, authorizing the fabricator to carry out the modifications, failing which the offer is liable for rejection.

Rear Superstructure: The rear superstructure (after cabin) shall be fabricated from ms. sections / angles / channels or from aluminium extrusion profile section framework constructed with bolt & nut system, & panelled with aluminium plates by means of glue without welding. The profiles (in case of aluminium), shall be of strong & solid construction (ISO6063T6 material is preferred), light in weight & intrinsically rectangular design, with a distortion insensitive bearing. ***In both cases, superstructure shall be guaranteed for corrosion resistance for the complete life of the vehicle***



(*min 10 years*). Roof panels shall be made of aluminium Chequered / padded plates & the roof shall be strong enough for being walked-on. Intermediate walls & shelves of the lockers shall be constructed from aluminium sheets, which are panelled to the structure by means of glue without any welding. The outer panelling of superstructure will be done from 3 mm aluminium sheets. Inner panelling will be done from 2 mm aluminium sheets. Complete top of the superstructure shall be covered with 3 mm aluminium sheets / chequered plates. Sheets of outer panelling will be glued to framework. Rivets / screws not allowed.

Lockers / Drawer / Slide System: All lockers shall be designed as per latest international standards / designs, with vertical & horizontal sliding drawers & folding partitions. Horizontal drawers shall be provided for fitment of heavier equipment at the bottom of the locker & shall be of the roll in-roll out type with opening in tapered position giving easy & immediate access to equipment. Vertical slides shall be provided for fitment of lighter equipment & shall open in a straight line. Sliding mechanism shall be such, that it is easily operated by one hand. There shall also be flap type folding partitions which are provided on the outer part of locker & made in such a way that they occupy least area while offering maximum space. All such equipment that cannot be accommodated in the drawers / slides due to size/weight constraints will be stored on these flap partitions. Behind these folding partitions, equipment shall be stored in easily removable bins, which will be provided with rollers underneath to facilitate easy movement. All equipment would be stowed scientifically & systematically a designated location identified by printed graphics. The colour printed identification will show exactly which item is located in that area. Drawers/slides shall be of aluminium & flap partitions shall be from tubular steel. All drawers / slides & partitions shall have self-locking systems to prevent accidental opening while vehicle is in motion. All equipment stored in lockers will be strapped / clamped in a neat & convenient manner. All lockers will be suitably labelled (with laser engraved plates).

Roller Shutters: For the easy operation, MCD / Fireco / Dover, make roller-shutters covering equipment lockers shall be installed on both sides. These shutters shall be rolled inwards underneath the roof giving unobstructed access to the equipment lockers & the equipment / accessories fitted in the vehicle. Roller shutters shall be made of hollow rectangular shaped aluminium links which will be inter connected with the help of plastic / rubber profiles, sealing the roller shutter watertight when closed. They would be durable, weather & corrosion resistant & capable of opening in every position of the vehicle even in rough terrain. The sections of the shutter shall be powder-coated / anodized to a smooth finish & aesthetic look. The shutters shall have a locking mechanism (single key) to prevent accidental opening during movement of the vehicle. A master switch for isolating locker lighting circuit shall also be fitted in the driver's cabin. LED lights of min 1 Mtr. length, shall be provided on both sides of shutter (internal lighting) & in drip channel on top (external lighting). The lights shall be controlled by a magnetic switch which is embedded into the profile. The shutter shall be fitted with pull down straps. Complete shutter assembly including main horizontal sections, side, bottom & drip profiles, LED lighting, as well as the single key locking system shall be from shutter OEM only.

Electrical Equipment: Adequate lighting arrangement shall be made in all compartments. All equipment lockers will have internal lighting arrangement automatically switched on & off by opening/closing of doors/shutters. All wiring will be properly fixed in position & will be protected against heat, oil & physical injury. To the extent possible all wiring will pass through conduits. All wires shall be stranded copper or copper alloy conductors of a gauge rated to carry at least 125 percent of the maximum current for which the circuit is protected & shall be uniquely identified by colour coding or permanent marking. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The use of star washers for circuit ground connections shall not be permitted. All electrical circuits will have their own fuses, suitably marked & grouped in a common fuse box, located in an easily accessible position. Provision will be made for min. 4 spare fuses in the box. The battery will be placed in an enclosed box. Arrangement shall be made on the dashboard opposite the fire officers' seat to fix a mobile wireless set. Power supply shall be provided from vehicle battery.



Telescopic Light Mast: An NFPA compliant, low profile, roof mounted lighting system, fitted with IP 67 certified 4X230 Watt LED lights, vertically elevated to 4.5 Mtrs above roof, capable of taking power from vehicle directly, operating on 12 & 24 volts shall be supplied. Lights shall be rated for an output of 60,000 lumens, & have a life span of 50,000 hours. Lights shall have flood as well as spot combination light patterns. Mast shall have dual tilt remote control positioner with rotation & tilt to provide total coverage, & allow a person to accurately aim for directional positioning. In addition there shall be a one button command to automatically retract mast, turn out lights & stow the system into transport position. The mast shall be made from aluminium 6061-T6 extruded profiles, with a base diameter of minimum 125mm. It will have tilt as well as pan angles of not less than 350 degrees, full extension from transport position not exceeding 60 seconds, wind speed handling of 100 Kmph & an integrated saddle installation. The operation pressure shall not be higher than 20-25 psi. A look up light will be integrated into the mast & all wiring right up to the lights as well as RCP will be internal. External wires shall not be accepted anywhere. The light mast shall be shock & vibration certified as per SAEJ1455 & MIL-STD-810G & hand held remote shall comprise of a glove friendly, impact resistant & water proof pistol grip design, which is easy to handle. The remote shall have a message display showing all functions of mast as well as error messages for trouble shooting. In case of power failure, it shall be possible to stow the mast manually without any special equipment. Weight of the system shall not exceed 70Kgs. Mast shall be of Willburt, Nightscan, Rosenbauer, Fedral Signal, Teklite, Brimotor, or Command Light make only.

Underbody & Perimeter Lighting: LED lights shall be installed under the cabin & body around the perimeter of the vehicle, in compliance with NFPA 1901. The lights shall be strategically placed to illuminate the immediate ground area around the vehicle. The under body lights shall be switchable from the cabin but also automatically activate when any of the cabin doors or shutters are opened. The remainder of the lights shall be switched on from the cab. There shall be one flashing red LED located in cab, within clear view of the driver, which shall be automatically illuminated whenever any passenger or body door is ajar, or if the telescopic light mast is not properly stowed. The light shall be marked "Do Not Move Apparatus When Light Is On" in compliance with NFPA 1901. There shall also be provided 5 LED lights at the highest level of the vehicle for area lighting in the vicinity of the vehicle. These shall be fitted at strategic locations on the sides (above the shutters). Minimum one light shall be installed above each shutter. Blue strobe lights shall be provided at all four corners of the vehicle top (two on cabin & two at the rear). These shall be of the high intensity type with regular & intermittent flash pattern. Cover of these lights shall be moulded as per body profile & shall sit flush with the base & sides. Reference for complete lighting package may be taken from reputed international vehicle manufacturers like Rosenbauer, Magirus, Oshkosh, etc.

Light Bar & PA System: The LED Light Bar shall be mounted on top of the driver cabin. The light bar shall have LED slim light bar. The PA system shall be of minimum two tones & min. 120 decibels. The PA system shall have an integrated mic with volume control. Mic shall have a telephone cable so that it can be used from driver's side as well as officer's side.

Fittings & Accessories: Following accessories will be provided on the appliance:

- a) Two Spot lights on front roof top (next to light bar)
- b) Two high intensity Strobe lights in front grill
- c) Two Fog lamps on the front bumper (Hella make)
- d) Four Blinker type traffic indicators (OEM supplied)

Ladder With Beam Gantry: The vehicle shall be fitted with a motorized single tier ladder beam gantry on the vehicle roof. The system shall be suitable for fixing a 10.5 m trussed type extension ladder. The beam gantry system shall allow slipping & loading of the ladders entirely from the ground level without the need for climbing on to the deck of the truck. It shall be permanently attached to the truck & shall balance &



pivot at predetermined points to allow the ladder to be cantilevered & tilted towards the ground when it can be removed from the beam & go to work from ground level. The beam gantry shall house automatically using a safety latch. The beam & slide mechanism shall be made of aluminum 6061-T6 alloy, & shall use solid bearing technology. The automatic safety catch fitted at the base of the beam shall secure the beam from moving when it is housed in the vehicle & when the vehicle is moving. Additionally, the rubber and plastic parts used in the locking of the ladder to the gantry shall be of reputed make and shall be guaranteed by the OEM for minimum 10 years or 5,000 operating cycles. The aluminum extension ladder (CE marked) 10.5 Mtr. trussed type Aluminum Double Extension ladder (as per **JCDD/10** standards) shall be supplied along with beam gantry, suitable for fixing in the same gantry. The design of the beam gantry shall be such that the ladder can be released without difficulty from a reasonably accessible position **by remote**. Means shall be provided for locking the ladder when stowed. The details of the Ladder and Beam Gantry, such as its make and model, supported with catalogues/brochures/drawings etc. should be attached with the offer. Bidder shall submit an OEM authorization failing which the bid may be rejected.

Accessories: Following accessories to be supplied / fitted with foam Nurser:

Sr.	Description	Qty.
1.	CE marked Aluminum Trussed ladder 10.5 Mtrs.	1 No.
2.	Two each Fog lamps and Reversing lights powered by the battery of chassis	2 Nos.
3.	Search light with 100 ft length cable with tripod powered from main batteries	1 set
4.	An adjustable spot light	1 No.
5.	Tools required for routine maintenance of appliance, not included with chassis kit	3 Set
6.	Removable spark arrestor fitted to the exhaust of the engine.	1 No.
7.	A trickle charger 250V AC supply for self charging of battery with a pilot light	1 No.
8.	Hydraulic Jack (25 T).	1 No.
9.	Delivery hose 10mtrs with 50mm coupling & lugs for foam transfer	2 Nos.
10.	Suction hoses with screwed coupling, with lugs, 5 Meters. for foam transfer pump.	4 Nos.
11.	Electrically operated barrel pump Hacop make, 40 LPM capacity	1 No.

General Requirements:

7. GVW of the vehicle shall not cross the recommended GVW of chassis manufacturer.
8. Weight distribution diagram should be submitted to officer-in-charge for approval.
9. Vehicle should conform to provisions contained in the M.V. Act 1988 & M.V. Rules 1989.
10. Drawings & QAP shall be approved by client before commencement of fabrication.
11. Stage inspections shall be carried out based on approved drawings & QAP only.
12. Safe custody of chassis till the complete vehicle is handed over to client is vendors responsibility.

Scope Of Work:

10. The scope of work includes procurement of chassis on behalf of the client & safe custody.
11. Chassis shall be covered by an indemnity bond equal to cost of chassis, by successful bidder.
12. Design, engineering, fabrication, inspection, supply, transportation & delivery at client's site.
13. Imparting training to client's personnel on operation & maintenance without additional cost.
14. Workmanship should be elegant & with highest quality of engineering practices.
15. Any documents required for fitness of Vehicle from RTO shall be supplied by the vender.
16. There should not be any loss/ damage to tool kit, fittings & accessories provided with the chassis.
17. In case of loss or damage, it shall be made good by the manufacturer at their own risk & cost.
18. Once vehicle is ready, revalidation of temporary registration shall be done for 30 days.

SIGNATURE & STAMP OF BIDDER



Operation, Maintenance & Instruction Book:

6. Instruction & inspection manuals including operation & maintenance shall be supplied (3 copies).
7. Books should include itemized & illustrated spare parts list giving reference numbers of all parts.
8. Operation & maintenance manuals of all aggregates like pump, PTO, monitor, Light mast, etc.
9. Detailed drawings with all dimensions at the time of delivery.

Delivery: The manufacturer/fabricator shall complete the Foam Nurser fabrication within the period of 180 days from receipt of chassis. After fabrication & acceptance, the Foam Nurser shall be delivered at site at manufacturers own risk & cost. The cost of transportation, transit insurance & temporary registration shall be in the scope of the vendor only. Final registration shall be done by the client.

Performance Guarantee: The manufacturer shall guarantee the design, material, workmanship & the performance of the complete unit for a period of 12 months from the date of supply of completed vehicle. Any mechanical defect, faulty workmanship or operational defects found during this period shall be rectified by the vendor at owner's premises without any extra cost of client.

Training: After supply of vehicle, vendor shall provide training on operation & maintenance including chassis at client & charges for the same shall be included in the price. Additional one week free training will be given at owner's site within warranty period.

Deviations: There shall be no deviation to the specification unless agreed by owner in writing. In case there are any deviations from the above mentioned specifications / tender documents, the vendor shall give the same separately for the scrutiny of the technical committee. In case there are any valid deviations, these may be considered by the client. However, the client shall have absolute power & may reject the offer without assigning any reasons whatsoever.

Painting & Marking: The entire vehicle paint system shall be guaranteed for fade resistance for 5 years & anti-corrosion for 10 years. All painted surfaces shall withstand peeling, blistering, etc for a period of at least 10 years from delivery. The manufacturer shall give this in writing at the time of delivery. Once the paneling is completed, all the outside surfaces shall be painted with a good quality paint system, like Du-Pont, PPG, Standox etc. This shall be poly-urethane (PU) based paint with a life of minimum 10 years. The complete vehicle (all exterior surfaces) & monitor shall be painted with at least 2 coats of zinc phosphate primer each of 50 microns

DFT & two coats of polyurethane finish paint each coat of 50 microns DFT. Further improvement on the paint may be carried out by the manufacturer beyond that mentioned above, to give better protection & surface finish. The color for the outside will be as per the latest international & Indian norms for fire brigade vehicles. The user name will be written on both-sides with yellow color. Water lines shall be painted with of zinc phosphate epoxy primer each of 50 microns DFT & two coats of polyurethane finished paint each coat of 50 microns DFT. Water lines shall be painted red in color. The bidder shall give the details of the entire painting process & also the details of in house painting facilities like paint booth etc. The color for the outside will be as per the latest international & Indian norms for fire brigade vehicles. The user name will be written on both-sides with yellow color. Reflective stripe(s) shall be affixed to the perimeter of the apparatus. The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total width & shall conform to the minimum requirements of ASTM D 4956, Standard Specification for Retro reflective Sheeting for Traffic Control, Type I, Class 1 or Class 3. At least 50 percent of the cab & body length on each side, at least 50 percent of the width of the rear, & at least 25 percent of the width of the front of the apparatus shall have the reflective material affixed to it. Owner's emblem in original colour together with name (in Hindi & English) as below shall be written in golden yellow colour on both sides of the vehicle. The inside of lockers shall be painted in pale cream / grey colour. Under frame of chassis shall be painted with chlorinated rubber paint. The appliance shall clearly have the following marks at suitable locations.



1. Manufacturer's name & trade mark.
2. Year of manufacture
3. Pump serial numbers & capacities.
4. Capacity of water tank & foam compound tank in litres.
5. Engine & chassis number.
6. All instrument control & valves shall be identified with properly itched metallic Name plates.

Acceptance Tests: The acceptance tests as mentioned below will be given to complete satisfaction of inspecting officers. Vendor shall ensure that design of tender will not affect chassis parameters such as speed, turning circle, acceleration etc. All inspections & tests shall be carried out by the vendor to the complete satisfaction of client's representative, who shall have access at all reasonable times to vendor's works. All testing parameters shall be carried out at manufacturer's premises

Stability: Stability of appliance will be such that when fully equipped & laden, if the surface on which the appliance stands is tilted to either side at an angle of 27° from horizontal it will not overturn.

Gradient: The vehicle will be tested on a gradient test ramp at an angle of 1:4. as per BIS.

Endurance Test: The pump will be tested for a continuous period of 1 hour non-stop & the water will not be replenished during this test & the engine will not show signs of overheating. This test will be offered at the pump manufacturer's workshop prior to shipment. The testing charges for the same shall be borne by the vendor.

Shower Test: After completion of the fabrication, the vehicle will be subjected to shower test as per the norms laid down under BIS. The appliance will not show any signs of leakages during this test.

Road Test: After completion of all the above mentioned tests, a road test will be carried out where the vehicle will be tested as per the parameters laid down by the BIS. The braking, acceleration & top speed tests will be checked & recorded by the inspecting officers.



(Schedule-10) HAZMAT (CHEMICAL) Tender

Technical Specifications:

General: The Hazmat Rescue Tender shall confirm to specifications listed below. It shall be fabricated on 25 Ton GVW, minimum 300 HP Engine, approx. 4800-5000 mm wheelbase (6 X 4) BS-VI compliant chassis or similar or with higher capacity and speed having full forward control, powered steering and a fully automatic transmission with torque converter. Hazmat Rescue Tender shall be designed to effectively & efficiently carry all the equipment as specified in the following specifications which shall be fixed in a compact & ergonomic manner & shall be readily accessible for use during emergencies. Due care should be taken to ensure that all aggregates are designed for comfort of operator. The Chassis will be bought by the successful bidder on behalf of client. Payment for the chassis shall be done, against PI of the chassis manufacturer.

Cabin: Enclosed accommodation for driver & officer in charge shall be provided in an OEM fitted single cabin. *This cabin shall be further treated for ensuring that no outside gases are able to enter when the vehicle is deployed. For this purpose, all the external vents all openings shall be sealed by the fabricator. The air that is in the cabin shall be recirculated through the air-conditioning system. Additional filtered clean air will be forced into the cabin through a series of compressors, cylinders & HEPA filters. This will be done to keep the cabin under pressure when the vehicle is in a poisonous environment, & ensure that the outside air cannot enter. The same process shall be adopted for the rear cabin.*

Rear Cabin: A large rear cabin shall be provided to accommodate a minimum of 4 fully dressed crew members. The design of the cabin shall be such that it shall act as a crew cabin during travel & a mini command center cum laboratory once it is deployed at site. This cabin shall be equipped with command & communication devices, so that during an incident, it can be used as a command center for all operations. The floor of crew cabin shall be provided with good quality vinyl / rubber matting & a first aid box shall be fixed at a suitable location in the cab. The complete cabin shall be made from Stainless steel structural members, covered from the outside by aluminium panelling & from the inside by GRP/ABS sheets on par with latest international trends. The same process for pressurization & sealing (as mentioned for driver's cabin) shall be adopted for the rear cabin also. Vendor shall get the design approved from the client (along with detailed description of the proposed layout & pressurization system) before commencing fabrication activity.

Communication Devices: A laptop (with the latest installed software) shall be provided in this cabin. They shall be fitted in such a manner, that they are not prone to damage while the vehicle is in motion. Another large LCD screen of min. 32" shall be provided with similar fitting. This screen shall be connected to the antenna mast & shall be used for receiving live coverage of the incident. 2 sets of Motorola walky-talkies (total 4 Nos.) shall be provided & their bases shall be fitted in a proper way on the wall of the crew cabin. A suitable arrangement shall also be made for 3 - 4 persons to sit inside the cabin & monitor the situation through the screen & communication devices. The antenna mast (specifications mentioned elsewhere) shall be connected to this cabin & will permit simultaneous two way communication with HQ. Complete details of the system shall be submitted before commencing fabrication.

Cabin Air-Conditioning: A heavy duty air conditioning system shall be provided for the two cabins. The OEM fitted AC will be retained & a separate system shall be provided to cover for the second cabin. The temperature inside both cabins (driver as well as crew cabins) shall be suitable for hot tropical climates & shall maintain the temperature between 25-27 degrees centigrade even if outside temperature exceeds 45 degrees. The AC vents shall be ducted to uniformly provide cooling in every part of the cabin, irrespective of the heat load of 6 persons. He The AC shall be of standard makes like Carrier, Thermoking, Asian, etc.



Seating: The officer & the 4 crew members at the rear shall be provided with individual seating fitted with brackets for placement of Breathing Apparatus in an upright position. All the seats shall be of wear & walk away type, so that when the crew disembarks from the vehicle the BA sets should easily come off the seats with them. The driver shall be provided with a BA cylinder which is securely mounted at the rear of the seat, with a readily deployable face mask. The seats for the rear crew shall have theatre type seat bottoms, which will automatically flip when they get up, thereby freeing up space for easy embarking & disembarking. All crew seats shall have integrated seat springs to isolate shock while in motion. They shall have a fixed type, seat-back recline, to improve rider comfort & an auto-pivot & return headrest for rapid seat egress. The seats shall have right shoulder seat belt release & a swivel bezel & flip-up armrests. Seats shall be of HO Bostrom (model Tanker 450 ABTS)/ Seats Inc. (Battalion SCBA Crew Flip Seat) or equivalent make only.

Structure & Panelling: The complete rear superstructure shall be from 2mm SS 316L sections, tubes, flats or from corrosion free aluminium extrusion profile section framework constructed with bolt and nut system without welding work and panelled with aluminium plate by means of glue without any welding work. The Profiles shall be strong, solid all **aluminium construction (ISO6063T6)**, coated with chemical resistant paint. It shall be light in weight and intrinsic rectangular design with a distortion insensitive bearing. All angles, channels in case of SS shall be of minimum 3mm. Outer panelling shall be of 3mm aluminium sheets & internal panelling shall be from 2mm aluminium sheets. The top of the rear superstructure shall be covered with aluminium sheets treated for anti-slippage or with 3mm chequered sheets. All exterior panels shall be glued to framework. Riveting/bolting shall be strictly avoided.

Lockers for stowage of equipment: All the lockers shall be designed as per the latest international standards / designs, with vertical & horizontal sliding drawers & folding partitions. The horizontal drawers shall be provided for the fitment of heavier equipment at the bottom of the locker & shall be of the roll in-roll out type with opening in tapered position giving very easy & immediate access to all equipment. The vertical slides shall be provided for fitment of lighter equipment & shall open in a straight line. The sliding mechanism shall be such, that it is easily operated by one hand. Along with the drawers & slides, there shall also be flap type folding partitions which are provided on the outer part of the locker & made in such a way that they occupy the least area while offering maximum space. All such equipment that cannot be accommodated in the drawers / slides due to size/weight constraints will be stored on these flap partitions. Behind these folding partitions, equipment shall be stored in easily removable bins, which will be provided with rollers underneath to facilitate easy movement. All equipment would be stowed very scientifically & systematically & each will have a designated location identified by printed graphics near their location. The colour printed identification will show exactly each item is located in that area. The drawers / slides shall be from aluminium material & flap partitions shall be from tubular steel material. All drawers / slides & partitions shall have self-locking systems to prevent accidental opening while vehicle is in motion.

Shutters/Drawers/Partitions: All equipment inside the lockers would be stowed very scientifically and systematically in the drawers and each piece of equipment will have its designated location so that at the time of Emergency the required equipment can be very easily located and removed for use. Location of equipment (labels) shall be provided on each locker compartment for immediate identification. All equipment would be properly clamped and strapped in the drawers to prevent shifting of the equipment while the vehicle is in motion. The lockers shall have smooth operation. The aluminium shutters shall be of imported MCD France / AS / Dover make (efficient enough to prevent entrainment of dust and water) and made of extruded aluminium sections. The shutters shall be of roller type only and not sliding type. Each enclosure / space for equipment shall be provided with a lighting system which shall be centrally operated with separate switches for right and left lockers. All the space on sides of the vehicle, below the chassis frame level shall be utilized for stowing equipment and shall be covered with rollers shutters. Suitable folding / removable



arrangement shall be made for access to the lockers at height and removal of equipment from lockers.

Mounting of Superstructure: Compartment Superstructure shall be mounted on secure brackets of the steel sub frame made from Anti-Corrosive Treated MS 4" section and shall be bolted with the chassis using the high tensile bolts. Use of "U" bolts as well as direct mounting of Superstructure on chassis frame is strictly non-permissible. The construction of the cabin shall be in a shape (design for which shall have to be approved before fabrication), which shall provide maximum vision for the driver. A light bar of 1700 mm long operated on 12 volt battery having 2 nos. rotating red beacon lights, 4 nos. Amber strobe lights, hooter and PA system with external 100W horn in built amplifier and a microphone shall be provided in front of officer's seat in the driver's cabin. The structural drawings of the superstructure and cab shall be submitted along with the tender for proper technical evaluation. The body of the whole vehicle shall generally be divided into 3 compartments. First shall be the Driver Cabin, second shall be the Command and communication cabin and the third shall be for housing all the hazmat, rescue and firefighting equipment/aggregates.

Generator: A generator of 25 KVA shall be provided driven by second PTO off the transmission. Due care shall be taken to ensure that the design is robust & has least maintenance. A control panel shall be provided at a suitable place with the following:

Three sockets (plugs) & switches with 3 phase connections.

4 sockets (plugs) & switches (MCB's) with single phase connections of min. 20 AMP cap.

4 sockets (plugs) & switches (MCB's) with single phase connections of min. 10 AMP cap.

RPM Meter digital – 1 No.

KW meter digital – 1 No.

Digital Ampere Meter (for each phase) – 3 Nos.

Frequency meter digital – 1 No.

32 Amps. TPN MCB – 1 No.

90 Mtr. 3 core cable on reel – 3 Nos.

Power Take Off: The P.T.O's for driving the pump and generator shall be selected by fabricator as per above requirements & shall be compatible with the transmission. Details of the PTO's shall be submitted with offer.

Light Mast: The vehicle shall be provided with a roof mounted fold down light mast, which shall work on DC supply, without any additional power generator. Height of mast when fully extended shall be 4.5 Mtrs. from roof. The mast shall stow automatically after operation with one touch. Full deployment of the mast shall be possible within 60 seconds. The telescopic movement of the tower shall be pneumatically operated with an inbuilt compressor. The unit shall be supplied with four IP67 certified 4X230 Watt LED (3000 K) lamps. These shall be rated for minimum 60,000 lumens & have a life of 50,000 hours. They shall have flood as well as spot combination light patterns. The mast shall be made from aluminum 6061-T6 extruded profiles, with a base diameter of minimum 127mm. The mast shall have a dual tilt remote control positioner, with rotation & tilt to provide total coverage, & allow a person to accurately aim for complete directional positioning. The mast will have a dual tilt angle of approx 3500 & a pan angle of approx 3500. The light mast shall be supplied with a wired controller having 10m cable length, which shall allow operation of all functions & accurately aim for directional positioning (rotation/pan/tilt/lights on/lights off). A look up light will be integrated into the light mast for safety operation in the night. Light Mast shall have integrated camera for recording & surveillance & providing real time monitoring of emergency scenes. The camera shall have a built-in optical zoom lens for high quality & clear images, a built-in image stabilizer to prevent blurred images, endless pan rotation at a speed range of 0.1° to 100° per second & a tilt angle from -22° to +90°, at a speed of not less than 60° per second with a preset accuracy less than ± 0.1°. The remote control shall have pan & tilt functions for full scene coverage. The camera shall have an aluminium body & a weather resistant lens cover (IP66). It shall be compatible with



Digital Video Recording for maintaining records & documentation. It shall be plug & play with a video display monitor compatible with NTSC & PAL formats. The controller shall have a built in monitor with a 4.3" LCD screen & joystick control of pan, tilt & zoom functions with manual & auto controls suitably placed in the crew cabin. Effective pixel rate shall not be less than 600K, resolution should be 700TV lines for color and 800TV lines for B/W mode & minimum color DSS illumination shall be 0.001 lux typical & 0.0004 lux for B/W mode. The lens shall have min 36 x power zoom & 32 x digital zoom, automatic power 12VDC & an operating temp. of -20°C to +50°C. Ingress Protection should not be less than IP66. Recording media: The images shall be recorded to a portable hard drive, capacity 1 TB, which can be taken out for downloading. Mast & integrated camera shall be Night Scan, Federal Signal, Teklite, Will-Burt make.

Cable Winch: An electrically operated cable winch of not less than 6.5 tons pulling capacity (single layer) would be provided. The winch unit should be complete with minimum 5.5 hp, 12v or 24v DC series wound electric reversible motor for increased pulling power. The motor and solenoids shall be grounded to the battery. It shall have an automatic load holding brake system for more strength. For free spooling the clutch design shall be easy to use type with spring loaded pull and rotate system. The gear system should be 3 stage planetary type for faster line speed and the gear reduction ratio shall not be more than 300:1, the rope drum shall not be of more than 8 inches dia and shall be supplied with minimum 90 ft heavy duty galvanized EIPS wire rope with replaceable self locking clevis hook and would be mounted on the front bumper of the vehicle with suitable strong supports and a 4 way roller fairlead. The weight of the winch shall not be more than 55 kgs.

Electrical System: All wiring shall be properly fixed in position & shall be protected against heat, oil & physical injury. To the extent possible all wiring will pass through conduits. The wires shall be stranded copper of a gauge rated to carry at least 125 percent of the maximum current for which the circuit is designed / protected. Voltage drops in wiring from power source to using device shall not exceed 10%. All the electrical circuits will have their own separate fuses, suitably marked & grouped in a common fuse box, located in an easily accessible position. Provision shall be made for min. 4 spare fuses in the box which shall be provided in driver's cabin. The battery shall be placed in an enclosed box.

Under-body / Perimeter / Area Lighting: LED lights shall be installed under the cabin & body around the perimeter of the vehicle, in compliance with NFPA 1901. The lights shall be strategically placed to illuminate the immediate ground area around the vehicle. The under body lights shall be switch-able from the cabin but also automatically activate when any of the cabin doors are opened. The remainder of the lights shall be switched on from the cab. There shall be one flashing red LED located in cab, within clear view of driver which shall be automatically illuminated whenever any passenger or body door is ajar, or if the telescoping light mast is not properly stowed. The light shall be marked "Do Not Move Apparatus When Light Is On" in compliance with NFPA 1901. There shall also be provided 5 LED lights at the highest level of the vehicle for area lighting in the vicinity of the vehicle. These shall be approx. 1 Mtr in length & shall be fitted at strategic locations on the sides (above the shutters). Minimum one light shall be installed above each shutter. Blue strobe lights shall be provided at all four corners of the vehicle top (two on cabin & two at the rear). These shall be of the high intensity type with regular & intermittent flash pattern. Cover of these lights shall be moulded as per body profile & shall sit flush with the base & sides. Reference for complete lighting package may be taken from reputed international vehicles.

Ladder With Beam Gantry: The vehicle shall be fitted with a *remote controlled electrically operated* single tier ladder beam gantry on the vehicle roof. The system shall be suitable for fixing a 10.5 m FRP extension ladder. The beam gantry system shall allow slipping & loading of the ladders entirely from the ground level without the need for climbing on to the deck of the truck. It shall be permanently attached to the truck & shall balance & pivot at predetermined points to allow the ladder to be cantilevered & tilted towards the ground when it can be removed from the beam & go to work from ground level. The beam gantry shall house automatically using a safety latch. The beam & slide mechanism shall be made of aluminium 6061-T6 alloy, & shall use solid bearing



technology. The automatic safety catch fitted at the base of the beam shall secure the beam from moving when it is housed in the vehicle & when the vehicle is moving. Additionally, the rubber and plastic parts used in the locking of the ladder to the gantry shall be of reputed make and shall be guaranteed by the OEM for minimum 10 years or 5,000 operating cycles. The aluminium extension ladder (CE marked) 10.5 Mtr. FRP Extension ladder shall be supplied along with beam gantry, suitable for fixing in the same gantry. The design of the beam gantry shall be such that the ladder can be released without difficulty from a reasonably accessible position. Means shall be provided for locking the ladder when stowed. The details of the Ladder and Beam Gantry, such as its make and model, supported with catalogues/brochures/drawings etc. should be attached with the offer. Bidder shall submit an OEM authorization failing which the bid may be rejected.

Light Bar & PA System: The LED Light Bar shall be mounted on top of the driver cabin. The light bar shall have LED slim light bar. The PA system shall be of minimum two tones & min. 120 decibels. The PA system shall have an integrated mic with volume control. Mic shall have a telephone cable so that it can be used from driver's side as well as officer's side.

Accessories: The vehicle will be provided with the following accessories. All the accessories will be suitably fixed in position or will be kept in lockers or other suitable place on the tender.

Fog lamps powered by the battery of the appliance	2
Adjustable Spot light	1
Portable inspection lamps	1

Equipment: The list of Hazmat handling equipment is mentioned below. However, for detailed specifications of each individual item, please refer to the specifications given at Annexure.

Sr. No.	Description of Equipment	Qty.
10.1	PROTECTIVE GEAR:	
10.1.1	<p><u>Heavy Duty Chemical Protection Suit Complete With Boots And Gloves With Carrying Bag:</u> Total encapsulation chemical protection suit to give the wearer the highest comfort in different work situations. Visor to be shaped extending the range of vision to include the sides. The suit will have glove connection providing gas tightness with increased tensile strength, as well as easy changing without any extra tools. An inside pocket for radio shall be provided. The seams shall be both extremely strong and extremely gas tight. The inside of the suit will have air ventilation. The suit shall be suitable to be worn with a clean breathing apparatus inside the suit. The suitable shall be highly resistant to the following chemicals in the minimum: Acetone, ammonia, chlorine, dichloromethane, diethylamide, ethyl acetate, methanol, sodium hydroxide solution 40%, n-octane, hydrochloric acid 36%, sulphuric acid 96%, nitric acid 65%, tetrahydrofuran, toluene. The following items shall be provided with the suit:</p> <ul style="list-style-type: none"> - Gloves, made of Viton against aggressive substances. - Gloves to be provided with PVC over-gloves and with cotton under-gloves. - Safety boots in accordance with DIN4843S10 or equivalent standard. - Sleeve cuffs for protection against defective gloves. - Rucksack padding to protect the suit material. - Outer visor to work under heavy soiling, a set of 10. - Anti-fog visor - Ventilation system flushing suit with min. 5 l/min switchable to 30 l/min. - The air shall be taken from the breathing apparatus. - Carrying bag and hanger. 	6 Nos.



10.1.2	<p><u>Light Duty Chemical Protection Suit, Complete With Boots And Gloves:</u> The suit shall be a re-useable gastight chemical protection suit with externally worn air breathing apparatus. It will protect against gaseous, liquid, aerosol and solid hazardous substances. It will offer highest comfort with excellent mechanical stability. The suit will have a gas tight closure system with an external chain and shall be equipped with a radio pocket. The protective gloves and boots shall be connected in a gas tight manner to the suit. The suit shall be equipped with a flexible, gastight face cuff which allows the protective suit to be used with various face masks. The suit shall have a ventilation system providing adjustable airflow to control the user's control his temperature and reduce humidity in the suit. The system will also allow additional breathing air to be introduced from an external source extending the operating time to perform longer tasks. Suit will have EN943-1:2002 & SOLAS approvals. Temperature range or use: -80 to +60 deg C. Storage temperature range: -5 to 25 deg C. Max. weight without face mask: 6 kgs.</p>	6 Nos.
10.1.3	<p><u>Disposable Protective Suit Type III Against Acids And Liquids:</u> The suits shall be of type 3 with CE mark. The suit shall be 100% particle tight with a tissue weight of min. 125 gram/m², and shall be disposable with no damage to the environment. The suit will have an anti-static coating on the inner surface. All seams shall be welded and over-taped providing 100% tightness. The suit will have an attached hood special chin flap with Velcro fastener compounding mask with hood. The front will have a double zipper with Velcro fastener flap. Hood, wrists and ankles shall be elastic. Colour: orange; Weight: max. 0.5 kgs. The suit will provide the following protection:</p> <ul style="list-style-type: none"> - Protection against inorganic acids and bases, and against organic chemicals. - It will protect against splashes up to pressures of 5 bars. 	6 Nos.
10.1.4	Protective goggles	12 Nos.
10.1.5	Warning vest	12 Nos.
10.1.6	<p><u>Self Contained Breathing Apparatus (Scba):</u> The Self Contained Compressed Air Breathing Apparatus (SCBA) will consist of a face mask with cylinder and associated equipment. The cylinder should be made of (carbon fiber) composite material. The cylinder would have a capacity of at least 6 liters. The cylinder filling pressure must be 300 bars. The cylinder test pressure shall be 450 bar, and its normal working pressure (after the first reducer) must be 7 bars. The SCBA working duration must be minimum 40 min. The cylinder will have at least 1800 liters of air at 300 bars. The SCBA weight would not exceed 12 kilogram while it's full. The SCBA back plate should be one whole part that shall be made of resistant, antistatic and heat-resistant, explosion-proof thermostatic material. The SCBA harness (carrying belts, waistband and shoulder bands) should be adjustable to the user easily, not giving discomfort to him/her resistant, wide, containing soft pads and heat-resistant. The cylinder valve group would meet DIN norms or approved equivalent norms and be coated with hard plastic. The high-pressure regulator shall be mounted on the back plate and it would reduce the output pressure of the cylinder to 7 bars. The cylinder pressure should be monitored from an electronic control unit with microprocessor connected to the pressure reducer and this electronic unit would alert the user with an audible warning device capable of emitting a warning sound at 90 dB minimums when the pressure inside the cylinder drops to 55 + 5 bars. The electronic control unit would have a back-lighted LCD screen and it would allow the user to monitor the pressure remaining inside the cylinder, the ambient temperature and the status of the battery of the control unit. The electronic control unit would check the user's consumption</p>	6 Nos.



	continuously and calculate the duration of the contents of the cylinder automatically, and display the remaining period on the screen. The electronic control unit would feature immobility and distress alarms. The immobility alarm should become active when the user remains immobile for 20-25 seconds and the distress alarm would allow the user to activate easily when she/he encounters an emergency situation. Facemask would meet the standards of EN 136 standards or approved equivalent. The glass of the whole facemask should be replaceable, a wide angle of sight at least 180°, panoramic and resistant against shocks and scratches. The speech diaphragm of the whole face mask should be made of replaceable and stainless steel. The whole facemask should be made of EPDM rubber resistant against abrasion, and the head straps should be stretched at five points minimum to get tightness. There should be an additional carrying band to carry the facemask on the neck. The demand valve attached to the front of mask would provide air into the mask passing to positive pressure at the first breath. It should be designed so as to prevent any leakage that may be caused by vacuum. There should be a mechanism on the demand valve that allows turning off the air entrance to prevent any air leakage while particularly removing the mask. The connection between the mask and the demand valve should be in an interlaced type satisfying the international standards, and the connection tubes should be very elastic and sound, easily serviceable, thin and light. It would not exceed 11 kg. together with full cylinder, face mask and back plate. The air supply tube to the facemask would incorporate a quick connection 'second man' attachment for rescue purpose, if necessary. Cleaning and the maintenance of the mask will not request any additional items. <i>Each Set will be supplied with a spare cylinder.</i>	
10.1.7	Spare air cylinder as per above specifications	6 Nos.
10.1.8	Full face mask complete with gas filter ABE 2-K2-P3	12 Nos.
10.1.9	Spare filter for full face mask ABE 2-K2-P3	12 Sets.
10.1.10	The vest will help absorb excess body heat providing comfort to the wearer when working in high temperature surroundings. It shall be worn under any chemical protective suit. The cooling effect of the vest will last up to 3 hours depending on the level of physical work. The vest will achieve its cooling effect by the phase change of its contents from solid to liquid by absorbing the body heat. The vest will achieve a cooling effect by min. 3 deg. C	12 Nos.
10.1.11	Emergency escape air cylinder with min.45 breaths capacity, 2 to 5 minutes air supply. Cylinder volume min 85 liters of air under 200 bars. Weight max. 700 gram. Complete with belt carrying pouch.	6 Nos.
10.2	FIRE RELATED EQUIPMENT	
10.2.1	Extinguishing blanket,	6 Nos.
10.2.2	10 kg ABC type portable extinguisher as per EN standards.	4 Nos.
10.2.3	<i>Portable Cafs Extinguisher:</i> The extinguisher shall be used to extinguish on-setting fires as well as car fires for first intervention purposes. The extinguisher will consist of a min. 9 ltrs. main water cylinder, a min. 4.5 liters 300 bar pressure cylinder pressurizing the water in the main cylinder and a water gun to throw the water and foam mixture. A pressure reducer will reduce the air pressure to the cylinder to operating pressure. The pressurized water shall be conveyed to the water gun. A hose coming out of the air cylinder shall be directly connected to the water gun. Preferably the pressurized water shall be mixed inside a compression chamber on the air gun, with the air coming directly to the air gun. The water foam	2 Nos.



	<p>mixture coming out of the compression chamber shall be sprayed in 100 to 150 micron water droplets by the water gun. The back pressure of the water at the gun resulting from the pressurized water shall be minimum. It shall be possible to use the water-gun with a single hand. The water flow shall be around 0.5 litre/sec. The water gun will have spray and jet flow formation. In case of spray the minimum distance shall be 4 Mtrs. In case of jet the min. distance shall be 15 Mtrs. The extinguisher shall be suitable to extinguish class A and B fires. A single air bottle fully filled shall be used min 3 times with the water container. Max weight of extinguisher filled with water will not exceed 30 kgs. .</p>								
10.3	RESCUE EQUIPMENT								
10.3.1	<p>Portable telescopic ladder: The ladder shall be telescopically extendable and adjusted to the required length. The height of the ladder shall be max. 700 mm in retracted position and min. 3.500 mm in extended position. The ladder shall be made of anodized aluminium material. While fully extended the carrying capacity shall be min. 200 kgs. The ladder shall be equipped with 2 each locking latches and double safety lock at each step. The ladder shall be provided with a carrying bag.</p>	1 No.							
10.3.2	Fireman’s knife	6 No.							
10.3.3	Safety belt cutting knife	6 Nos.							
10.3.4	<p>Spreader: The spreader shall be double acting hydraulically operated device of light weight construction made of anti corrosive high strength material capable of being lifted, & operated manually with ease. It would be capable of spreading & pulling with the combination of chains. A male connector shall be fitted to the tool to connect the hose. It shall be provided with spreading tips made of fully hardened, high tensile tool steel with proper serrations outside & inside for a perfect grip during spreading as well as squeezing operation. The tips shall be mounted on the spreader arms by means of a quick locking system. Quick lock system shall provide possibility to change spreading tips for cutting tips or pulling adaptors single handed, without loose parts & without extra tools. Pulling adaptors & pulling chains shall be offered as accessories. These accessories shall be of the quick lock type. Pulling adaptors shall be equipped with shortening hooks which easily fit in each shackle of pulling chains to ensure quick connection. Pulling chains shall be equipped with shortening hooks to easily mount the chains to any object of whatever size or shape. The spreader shall have following specifications:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Max. Spreading distance</td></tr> <tr><td>Min. Spreading force measured at 25 mm from the tips as per EN 13204</td></tr> <tr><td>Max. Spreading force</td></tr> <tr><td>Max. Squeezing force</td></tr> <tr><td>Max. Pulling distance</td></tr> <tr><td>Max. Pulling force with pulling attachments</td></tr> <tr><td>Weight</td></tr> </table>	Max. Spreading distance	Min. Spreading force measured at 25 mm from the tips as per EN 13204	Max. Spreading force	Max. Squeezing force	Max. Pulling distance	Max. Pulling force with pulling attachments	Weight	1 No.
Max. Spreading distance									
Min. Spreading force measured at 25 mm from the tips as per EN 13204									
Max. Spreading force									
Max. Squeezing force									
Max. Pulling distance									
Max. Pulling force with pulling attachments									
Weight									
	<p>Cutter: The cutter shall be double acting hydraulically operated light weight construction. Details & design features & its controls & material of construction of its such as blades, cylinders etc. shall be given in offer. Cutter shall be capable of cutting of various sections such as solid ground bar, hallow round bar, flat section, square tube, rectangular tube etc. It would also cut the door pillars of new generation cars. A male connector shall be fitted to the tool to connect the hose. The cutting blades shall be of shock resistant non corroding alloy steel, hardened & ground & shall be</p>	1 No.							



	<p>exchangeable & regrind able. The material of the cutting blades & hardness shall be indicated in offer. Cutter shall be able to cut sections as stipulated in EN 13204&NFPA 1936. It shall have following specifications:</p> <table border="1"> <tr><td>Blade opening</td></tr> <tr><td>Cutting force</td></tr> <tr><td>Weight ready for use</td></tr> <tr><td>Capable of cutting round bar</td></tr> <tr><td>Material of steel shall conform to EN 10025-1-2000 table 5, type S 235 JR</td></tr> <tr><td>Mandatory Compliance category of cutting performance as per NFPA 1936</td></tr> <tr><td>Mandatory Compliance category of cutting performance as per EN 13204</td></tr> </table>	Blade opening	Cutting force	Weight ready for use	Capable of cutting round bar	Material of steel shall conform to EN 10025-1-2000 table 5, type S 235 JR	Mandatory Compliance category of cutting performance as per NFPA 1936	Mandatory Compliance category of cutting performance as per EN 13204										
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	<p><u>Combination Tool:</u> The combi tool shall be double acting hydraulically operated of light weight construction made of anti corrosive high strength material. 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. A male connector shall be fitted to the tool to connect the hose. The blades shall be of shock resistant non corroding alloy steel, hardened & ground & shall be exchangeable e& regrind able. Tool shall have following specifications:</p> <table border="1"> <tr><td>Spreading Distance</td></tr> <tr><td>Spreading force measured at 25 mm from the tips as per EN 13204</td></tr> <tr><td>Spreading force</td></tr> <tr><td>Cutting force</td></tr> <tr><td>Squeezing force</td></tr> <tr><td>Pulling Distance</td></tr> <tr><td>Pulling Force</td></tr> <tr><td>Weight</td></tr> <tr><td>Capable of cutting round steel bar</td></tr> <tr><td>Material of steel shall conform to EN 10025-1-2000 table 5, type S 235</td></tr> <tr><td>Mandatory Compliance category of cutting performance as per NFPA 1936</td></tr> <tr><td>Mandatory Compliance category of cutting performance as per EN 13204</td></tr> </table>	Spreading Distance	Spreading force measured at 25 mm from the tips as per EN 13204	Spreading force	Cutting force	Squeezing force	Pulling Distance	Pulling Force	Weight	Capable of cutting round steel bar	Material of steel shall conform to EN 10025-1-2000 table 5, type S 235	Mandatory Compliance category of cutting performance as per NFPA 1936	Mandatory Compliance category of cutting performance as per EN 13204	1 No.				
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	<p><u>Telescopic Ram:</u> The ram cylinder shall be double acting hydraulically operated device of light weight construction suitable for manual application with ease. The details & design features of the ram & its controls & material used for construction of its major components such as pistons, cylinders & other components shall be given in the offer. A laser pointer shall be fitted inside the cross head for facilitating right & precise placement. The ram shall be capable of lifting & spreading. A male connector shall be provided to connect the hose. The telescopic ram shall have following specifications:</p> <table border="1"> <tr><td>Max. Spreading force 1st plug.</td><td>≥ 210kn</td></tr> <tr><td>Max. Spreading force 2nd plug.</td><td>≥ 100kn</td></tr> <tr><td>Length retracted</td><td>≤ 570 mm</td></tr> <tr><td>Stroke 1st plug.</td><td>≥ 375 mm</td></tr> <tr><td>Stroke 2nd plug.</td><td>≥ 350 mm</td></tr> <tr><td>Total stroke</td><td>≥ 725 mm</td></tr> <tr><td>Max. Length</td><td>≥ 1275 mm</td></tr> <tr><td>Weight</td><td>≤15 kgs</td></tr> </table>	Max. Spreading force 1st plug.	≥ 210kn	Max. Spreading force 2nd plug.	≥ 100kn	Length retracted	≤ 570 mm	Stroke 1st plug.	≥ 375 mm	Stroke 2nd plug.	≥ 350 mm	Total stroke	≥ 725 mm	Max. Length	≥ 1275 mm	Weight	≤15 kgs	1 No.
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<p><u>Rescue Ram:</u> The ram cylinder shall be double acting hydraulically operated device of light weight construction suitable for manual application with ease. The details & design features of the ram & its controls & material used for construction of its major components such as pistons, cylinders & other components shall be given in the offer. The ram shall be capable of lifting & spreading operation. A male connector shall be fitted to the tool to connect the hose. Ram shall have following specifications:</p>	1 No.										
<table border="1"> <tr><td>Max. Spreading force</td></tr> <tr><td>Max. Pulling force</td></tr> <tr><td>Spreading / pulling stroke</td></tr> <tr><td>Retracted length</td></tr> <tr><td>Max. Length</td></tr> <tr><td>Weight</td></tr> </table>	Max. Spreading force	Max. Pulling force	Spreading / pulling stroke	Retracted length	Max. Length	Weight					
Max. Spreading force											
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<p>The following accessories like shall be supplied with the Ram</p>											
<table border="1"> <tr><td>Flat Base (round)</td></tr> <tr><td>Connection piece</td></tr> <tr><td>Extension pipe 165 mm</td></tr> <tr><td>Extension pipe 330 mm</td></tr> <tr><td>Extension pipe 500 mm</td></tr> <tr><td>Wedge piece</td></tr> <tr><td>Conical Tip</td></tr> <tr><td>Cross head</td></tr> <tr><td>Pulling attachments</td></tr> <tr><td>Pulling chains</td></tr> </table>	Flat Base (round)	Connection piece	Extension pipe 165 mm	Extension pipe 330 mm	Extension pipe 500 mm	Wedge piece	Conical Tip	Cross head	Pulling attachments	Pulling chains	
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Wedge piece											
Conical Tip											
Cross head											
Pulling attachments											
Pulling chains											
<p><u>Hydraulic Power Pack Electrically Operated:</u>The hydraulic power pack shall be capable of powering a tool independently & have connection possibility for additional tools. The hydraulic pump shall be driven by a electrical motor. The power of the engine shall be sufficient to drive the hydraulic pump to give output sufficient to operate the two tools simultaneously. Motor & pump shall be mounted on tubular frame with integrated handle. Provision shall be made to refill hydraulic oil through opening which shall be covered with threaded cap. All hot parts of the power pack shall be properly shielded to avoid possibility of injury to the operator. There shall be provision of light near valve block for ease in operation during night. All controls on the power pack shall be easily accessible & properly labelled in English language. The power pack shall be provided with 3 stage axial pump with a minimum output of 2800–3000 cc/min per valve in the first stage & at least 1100-1250 cc/min per valve in the second stage & at least 500cc in the third stage. Each pump shall be provided with an automatic change-over valve that switches the first stage output to no load to assure the high output in first stage & second stage. Each pump shall be protected with two internal safety valves, factory set at a suitable maximum pressure.Capacity of hydraulic oil tank shall be approx 2.5 litres to supply the sufficient quantity of oil to two tools simultaneously with ample reserve capacity for the re-circulation of oil to avoid the overheating in prolonged operation. Specifications are given below:-</p>											
<table border="1"> <tr><td>Capacity oil tank (effective)</td><td>Min. 4liters</td></tr> <tr><td>Pump type</td><td>3 stage axial pump</td></tr> <tr><td>No. of tools connected</td><td>Two</td></tr> </table>	Capacity oil tank (effective)	Min. 4liters	Pump type	3 stage axial pump	No. of tools connected	Two					
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No. of tools connected	Two										



No. of tools to be operated simultaneously	Two
<p><u>Hydraulic Hose:</u> High quality ‘Thermo Plastic’ hose of 10 Mtrs. length each for pressure & return line with quick connect couplings suitable to connect power pack & tools shall be supplied with the pump. Total 2 Nos. of hoses of 10 Mtrs. each shall be supplied with the pump. The hoses shall be in two different colors to identify easily. Non-interchangeable hydraulic coupling designed for quick connection / disconnecting shall be provided with dust caps, complete with automatic self-locking system. The hoses shall have the working pressure suitable for tools & the bursting pressure of the hoses shall be 4 times the working pressure.</p> <p><u>Manual Hand Pump:</u> A lightweight hydraulic hand pump shall be supplied as a standby unit for power pack to operate the tools. It shall be of 2 stage design with oil capacity of not less than 1750 cc & shall be capable of developing adequate pressure for operating all the tools including the telescopic ram up to their full capacity. It shall be possible to operate the pump even when placed in an inclined/vertical position. The weight of the pump shall not be more than 8 kgs.</p> <p><u>Pneumatic Lifting Bags:</u> The Pneumatic Lifting Bags should be portable&light-weight,&should be in set form, consisting of bags, hose assemblies, Pressure gauges, pressure reducers, safety valve, Air bottle connector,&controller. The Bags should be in pairs&the lifting capacities should be between 10 to 85 Metric tons at 12-bar air pressure. The lifting capacity on higher side by 5% is allowed than the specified loads. The Pneumatic Lifting Bags&its accessories should comply with all the requirements stipulated under EN 13731. The copy of the EN certificate must be enclosed with the tender. The Bags should be type tested for artificial aging, 48 bar bursting pressure, dynamic fatigue loading, impact test, impulse loading, drop test, piercing test&abrasion test&certificate to that effect should be attached with tender. Each Bag should be constructed of Kevlar reinforced nitrile rubber with 3 layers aramide reinforcement covering the entire top&bottom surface of each lifting bag. Each Bag should be equipped with a brass valve connection 1/8” NPT internal thread&vulcanized into the reinforced corner of bag to which a male connector of quick connect coupling should be threaded in. This male connector should be replaceable if it gets damaged. Each Lifting Bags should have a yellow center mark molded into both sides of the lifting bags to centralize the bags when used in multiples. It should have reflective markings on all sides of the bag for easy identification when operating in the dark areas. The lifting bags should have an inter locking nonskid surface molded into each side of the bags. The lifting bags should be of black colour with florescent strips on all four sides for better visibility while working in dark areas&during night time. The bags should be provided with a warning&information labels. The information&the warning labels must be in English language&in pictograms for clear understanding. The insertion height of deflated lifting bag should not be more than 28mm. The air bags should be chemical&ozone resistant with carrying /handles straps shall be attached to the bags above 35ton lifting capacity. The Pneumatic Lifting Bags should be able to use in a temp. range of -20^0 c to $+55^0$ c. Each set of high pressure pneumatic lifting bags shall comprise of two bags in 6 sizes in term of maximum lift capacities i.e. 6 bags per set with accessories as indicated in the table below.</p>	



Lifting capacity	Inflation height ≤	Dimensions ≥	Weight ≤	Quantity
16 tons	250 mm	465 x 390 mm	05 kgs.	2 Nos.
31 tons	325 mm	600 x 530 mm	09 kgs.	2 Nos.
53 tons	415 mm	765 x 690 mm	15 kgs.	2 Nos.

The Total of 6 Nos. airbags will be supplied with the following accessories:-

Sl.	Description
1.	Pressure reducer 200/ 300 bar to 12 bar
2.	Dual Controller
4.	Air Hose 10 Mtrs. with couplings
5.	Shut off hose with safety valve
6.	Connection piece to connect two air cylinders

10.3.5	Multi-purpose axe: The tool shall be made of non-sparking metal and will offer a combination of min. 6 tools in one. It shall be used for the following purposes: Crash axe, hydrant wrench, spanner wrench, pry bar, hand pick, gas shut-off. The tool shall be made of high strength beryllium copper. Weight shall be max. 3.5 kgs.	2 Nos.
10.3.6	PIPE SQUEEZER: The working pressure of the pipe squeezer shall be at least 700 bars. Squeezing force of the pipe squeezer shall be min 145 kN. The pipe squeezer shall be used with the 3 m single acting hose and the hand pump supplied with the mini cutter. CABLE CUTTER: The working pressure of the cable cutter shall be at least 700 bars Cutting force of the cable cutter shall be min 50 kN. Maximum jaw opening shall be 85 mm. Capacity of cutting a ground cable shall be 50mm, capacity of cutting a telephone cable shall be 85 mm. The maximum weight shall be 7.5 kg. The cable cutter shall be used with the 3 m single acting hose and the hand pump supplied with the mini cutter.	1 No.
10.3.7	AC live detector as per following specifications: The AC live detector shall be used a warning device by sensing the electricity leak from a distance. This distance will not be less than 50 Mtrs for a naked transmission line and min. 4 Mtrs for a 220V line leak. The A C live detector will continue to function as a warning device in the night darkness. The A C live detector shall be turned on by a switch and a beep sound and flash light will provide indication of its readiness. The increase of the frequency of the beep sound and flashlight will indicate the proximity to the electric leak. The closer to the leak the higher the frequency. The length of the AC live detector shall be 600 mm (+/-10%) and its weight shall be max. 1 kgs.	1 No.
10.4	FIRST AID EQUIPMENT:	
10.4.1	Eye and face washing bottle Eye and face washing bottle	2 Nos.
10.4.2	First aid kit for burns, big size	2 Nos.
10.4.3	Foldable basket stretcher.	4 No.
10.5	ILLUMINATION EQUIPMENT:	
10.5.1	Rechargeable flashlight, ex-proof complete with charger: The flashlight shall be designed for emergency and industry services for use in any situation requiring high intensity illumination. It will have a water resistant and hard to break plastic	6 Nos.



	case and will withstand impact and harsh environmental conditions according to IP65. All fittings shall be sealed. The flashlight will have a sealed beam unit rated at min. 100W. The bulbs shall be highly resistant to shock and vibration. It will have a Ni-Cd or Li Ion battery. Other technical characteristics: The flashlight will have a minimum of 750,000 Candle Power. Continuous running time shall be min. 40 min. Maximum illumination range will not be less than 750 mts. Weight will not exceed 3 kgs, excluding the charger. Dimensions will not exceed 300 x 175 x 200 mm. It shall be delivered with AC charger.	
10.5.2	Plastic traffic cones	12 Nos.
10.5.3	Portable, telescopic illumination tripod with min. 4.5 m ext. & 2 x 230 W LED lights min. 3000 K	2 Nos.
10.5.4	Cable reel with min. 50 m single phase ex-proof cable to fit tools on the vehicle 2 sockets	1 No.
10.5.5	Cable reel with min. 50 m three phase ex-proof cable to fit tools on the vehicle 2 sockets	1 No.
10.5.6	Safety plug socket branch for 220V and 380V	2 Nos.
10.5.7	branch safety plug socket 16A/230V, water proof with cable of 1.5 m	2 Nos.
10.5.8	Electronic flashing light with built-in battery with min. 13 hrs of continuous operation	2 Nos.
10.6	SIGNALING EQUIPMENT	
10.6.1	Warning triangle	6 No.
10.6.2	Warning flag	6 Nos.
10.6.3	20 watt portable loudspeaker	2 No.
10.6.4	Cordoning off tape with spits and holders	20 Nos.
10.6.5	Warning lamp with double side: green/red	2 Nos.
10.6.6	Metal warning sign: NO ENTRY	2 Nos.
10.6.7	Metal warning sign: NO SMOKING	2 Nos.
10.6.8	Metal warning sign: EXPLOSIVE MATERIAL	2 Nos.
10.6.9	Metal warning sign: TOXIC MATERIAL	2 Nos.
10.6.10	Metal warning sign: CORROSIVE MATERIAL	2 Nos.
10.7	HOSES, FITTINGS & ACCESSORIES	
10.7.1	Polyester safety rope 20 m long, 11 mm dia, complete with carbine	4 Nos.
10.7.2	5 Mtrs long hose with steel jacket, 10 bar operating pressure, resistant to acids complete with couplings and Viton gasket	8 Nos.
10.7.3	Hose 5 m long, inner dia. 50 mm, 16 bar operating pressure, resistant to acids, complete with couplings and Viton gasket	6 Nos.
10.7.4	Hose 10 m long, inner dia. 50 mm, 16 bar operating pressure, resistant to acids,	2



	complete with couplings and Viton gasket	Nos.
10.7.5	Delivery hose 15 m long size C52, resistant to petrol derivatives and mineral oil, with non-conductive stainless steel couplings	2 Nos.
10.7.6	Three gate valve DN 50, with Viton or Teflon gasket	1 No.
10.7.7	Suction basket of special steel, size DN50, with gasket	1 No.
10.7.8	Special steel conical valve with blank cap and connection piece, size DN50/DN 32	1 No.
10.7.9	Special steel discharge pipe size DN50, 300 mm long, 45 deg. slope.	1 No.
10.7.10	Special steel discharge pipe size DN50, 350 mm long, 90 deg. slope	1 No.
10.7.11	Suction pipe made of special steel with return valve and acid coupling, 1000 mm long	1 No.
10.7.12	Suction pipe made of special steel with return valve and acid coupling and connection part size DN 50, 1500 mm long	1 No.
10.7.13	Suction pipe made of special steel 1000 mm long, with conical connection and 90 deg. entry slope with strainer and base with threads	1 No.
10.7.14	Special steel connection part DN50	4 Nos.
10.7.15	Flange with blank cap and viton gasket, complete with screws	8 Nos.
10.7.16	Universal vehicle filling connection (unika), special steel with Viton gasket	1 No.
10.7.17	Reducer with flange connection 1xDN 40, 1xDN 50, 1xDN80, 1xDN10, of special steel	2 sets
10.7.18	Tank connection part, one side threaded from the outside and the other side with flange and blank cap, of special steel	2 Nos.
10.7.19	PVC flange gasket 3 mm thick: 8 ea DN 40, 8 ea DN 50, 8 ea DN 80, 8 ea DN 100	2 sets
10.7.20	Tanker flange gasket 3 mm thick: 8 ea DN 80, 8 ea DN 100	2 sets
10.7.21	Special steel hexagonal nuts and bolts size DN 16-100	1 No.
10.7.22	Special steel hexagonal nuts and bolts size DN 16-125	1 No.
10.7.23	Special steel hexagonal nuts and bolts size DN 16-80	3 Nos.
10.7.24	Spark-free pick lock for acid	3 Nos.
10.7.25	Pipe clamp, set of 22 pcs: NW15, 20, 25, 32, 40, 50, 65, 80, 100, 150, 250 (2 of each)	1 set
10.7.26	Bolt set with nuts; resistant to min. category 6,6	5 sets
10.7.27	Thread connection set, galvanized, in carrying case, ¼", 3/8", ½", ¾", 1 ¼", 1 ½", 2"	1 set
10.8	HAND TOOLS	
10.8.1	Fireman's tool set, complete with a full set of tools: The tool set shall be all purpose for use in crash and emergencies. The set will contain everything needed to quickly cut through metal, webbing, wood, rope and other obstructions. Additionally a 170 piece mechanic's tool set with the details given below shall be	1 No.



	<p>provided. The crash and emergency set will consist of the following min. tools:</p> <ul style="list-style-type: none"> - Metal cutting saw 16” blade. - Aircraft cable cutter; 1/8 ” to ¼” capacity and 14” long. It will cut cables without deforming ends. - Lineman’s pliers 8” long, extra strong. - Hack saw frame with blades: adjustable from 8” to 12”. It will face 4 ways and will adjust 90 deg. for vertical and horizontal cuts. Complete with 3 fast cutting silver steel blades. - Grappling hook and rope, with 52” sling. - 2 X Phillips head screwdrivers 6” and 8”. - 2 slotted head screw drivers 6” and 8”. - 3 wooden plugs to plug fuel and control lines. - Vice grip wrench 10” long. - Serrated edge hand axe 15” long with handle insulated for 20.000 V. - Safety V blade rescue knife. - Weather resistant rubber coated nylon yellow carrying case. <p>5. Mechanic’s 170 pc tool set: The set will include a 170 pcs of various tools as follows:</p> <ul style="list-style-type: none"> - Crescent quick release ratchets with ¼”, 3/8” and ½” drive with release button. - Crescent mechanic’s combination wrenches in SAE and metric. - Extensions and adapters: ½” drive 5” extension bar. 3/8” drive 3” and 6” extension bar. 3/8” female to ½” male adapter. - Crescent 10” tongue and groove pliers with joint interlock. - Sockets: 6 point SAE and metric sockets ½” and ¼” drive. 12 point SAE and metric sockets 3/8” drive. 5/8” and 13/16” spark plug sockets. - 8” adjustable wrench, 1” jaw capacity. - Crescent magnetic bit driver with driver bits and holder: 40 bits and 2 holders. - Crescent 8” long nose pliers with non-slip handle grips. - Crescent hexagonal keys SAE and metric. 	
10.8.2	Spark-free sledge hammer	2 No.
10.8.3	Spark-free hammer 500 g	2 No.
10.8.4	Copper hammer	2 No.
10.8.5	Spark-free insulated pliers 180 mm	2 No.
10.8.6	Spark-free chisel 300 mm	2 No.
10.8.7	Spark-free screw driver 8 x150 mm	2 No.
10.8.8	Spark-free screw driver 10 x200 mm	2 No.
10.8.9	Spark-free spanner set SW 6-32	2 No.



10.8.10	Spark-free barrel spanner to open 22 different caps	2 No.
10.8.11	Spark-free adjustable wrench	2 No.
10.8.12	Spark-free pipe wrench 2 ¼” 540 mm long	2 No.
10.8.13	Spark-free pick axe 950 mm long	2 No.
10.8.14	Spark-free spade 1.250 mm	2 No.
10.8.15	Spark-free shovel 1.050 mm	2 No.
10.8.16	Pushing apparatus 1400 mm long handle, 400 mm width	2 No.
10.9	PLUGGING, SEALING, COLLECTION, CLEANING EQUIPMENT:	
	A: PLUGGING EQUIPMENT:	
10.9.1	Plugging wedge set made of wood, 5x 200/70 mm, 10x 150/70 mm, 5x 100/70 mm, 5x 50/70 mm	1 set
10.9.2	Leak sealing air bag set, consisting of: 1 each leak sealing air bag 1,5 bar, size 500x300 mm 1 ea leak protective cover 1 ea control organ 1 ea hose 1 ea pressure reducer 2 ea tensioning strap 1 set extension strap set 1 set foam pad 4 ea pipe sealing air bags of different sizes 70x150 mm, 100x200 mm, 200x400 mm, 300x600 mm 2 ea air cylinders	1 set
10.9.3	Polypropylene stopper 150 mm, 6x50/10 mm, 4x25/10 mm	1 set
10.9.4	Stopper made of soft wood 300mm long, 5x90/25 mm, 5x 60/10 mm, 10x25/10	1 set
10.9.5	Plastic wedge 800x500 mm, 200 mm high, resistant to mineral oil	4 Nos.
10.9.6	Leak plastering material, paste, resistant to acid, 8 cans of 500 ml set	1 No.
10.9.7	Plugging band, 100 mm. width, 10 m. length	1 No.
10.9.8	Plugging plate made of plastic foam, size 900x900x20 mm.	8 Nos.
10.9.9	Manhole cover 750x750 mm with re-changeable plastic material and resistant to mineral oil and leak-proof	4 Nos.
10.9.10	Cover set, with 2 carrying handles, 18 mm edged flange	1 set
10.9.11	Threaded plug set, galvanized: ¼”, 3/8”, ½”, ¾”, 1 ¼”, 1 ½”	1 set
	B. COLLECTION EQUIPMENT	
10.9.12	Collection trough box shaped and stainless steel, 1800 mm L X 450 mm W, 80 mm. D	1 No.
10.9.13	Special steel collection trough consisting of 4 pcs, 0,5 mm thick, approx. 2800 mm long and 480 mm width; semi circular with 4 guiding rope and safety hook with spring	1 No.
10.9.14	Collection funnel of special alloy steel; 400x400x150 mm., 600 mm. with discharge pipe, earthing connection, threaded connection piece and DN 50 acid connection	1 No.



10.9.15	Special steel funnel, 250 mm. dia.	1 No.
10.9.16	Special steel barrel, 20 litre, special steel design	2 Nos.
10.9.17	Special steel bucket, 15 litre, with double base, heavy duty type	3 Nos.
10.9.18	Scoop, 1 litre capacity, 450 mm. long handle, made of special steel	2 Nos.
10.9.19	Scoop, 5 litre capacity, 1600 mm. long handle, insulated against cold made of special steel	2 Nos.
10.9.20	Collection sheet 4x4 m, resistant to solvents, with reinforced corners, 800 micron thick	1 No.
10.9.21	Foldable plastic collection basin, 2500 litre capacity, resistant to acids, solvents, mineral oils, self erectable; with 1 each filling inlet and DN52 discharge outlet; dia. min. 2,4 m; filling height min. 0,6 m	3 Nos.
10.9.22	Oversize Barrel with threaded cap of thermo plastic and resistant to chemicals; total capacity 250 litres;	1 set
10.9.23	Flexible PVC container, 0,5 mm. thick, resistant to acid	10 Nos.
10.9.24	Wide container, 220 litre, high resistance to chemicals, size 1000 x 650 x 500 mm	4 Nos.
10.9.25	Bucket shaped container, 50 litre, with carrying handles	2 Nos.
10.9.26	Shovel for oil made of special steel alloy with handle extendible up to 2m	2 Nos.
10.9.27	Tank strap of polyester, 10 metre long, 50 mm width and 40 KN tensioning strength complete with ratchet	2 Nos.
10.9.28	Plastic folio, 25x4 metre, 0,2 mm. thickness	1 No.
10.9.29	Plastic bag, 1500x800 mm., 0,2 mm. thickness, with closing mechanism; transparent	10 Nos.
10.9.30	Sand bag resistant to acids, 300x600 mm.	30 Nos.
10.9.31	Oil collecting agent, Tip I, Tip II, 100 litre, in packs	4 Nos.
10.9.32	Portable water basin made of PVC, 3 m ³ capacity	1 No.
10.9.33	Inflatable 5 m ³ capacity portable water tank, complete with strapping equipment	1 No.
	C. CLEANING EQUIPMENT:	
10.9.34	Lime, 6 kg. in a bucket	1 No.
10.9.35	Hemp pack, 1 kg.	1 No.
10.9.36	Cleaning cloth in threads 2 kg	1 No.
10.9.37	Cleaning agent, 2 kg	1 No.
10.9.38	Cleaning cloth, 3 kg, grey color	1 No.
10.9.39	Mineral oil and chemicals absorbent barrier in 5 m length with absorption capacity of min. 60 times its weight	20 Nos.



10.9.40	Universal oil and chemical binding agent approved as type IIIR. Absorption capacity min.75 times its own weight; 5 kg/bucket	20 Nos.
10.9.41	Acid binding agent in 100 l plastic bag; Weight: 28 kg/bag	10 Nos.
10.9.42	Set of Pipe sealing kit for internal 12 mm to 100 mm and external pipe sealing, from 100 mm to 600 mm	2 Sets each
10.10	HAZMAT PUMP & RELATED EQUIPMENT:	
10.10.1	<p>Barrel pump for oil and chemicals as per following specifications</p> <ol style="list-style-type: none"> 1. The pump shall be designed to transfer inflammable, thin, neutral and corrosive liquids Such as solvents, petrol, synthetic resin varnishes, acetone, oils, acids and alkalis. 2. The motors shall be explosion protected without being affected by electrostatic charges which can be dangerous during the transfer of combustible liquids. 3. The max. delivery rate shall be 220 liters/min. 4. The delivery height shall be min. 20 meters. 5. The power of the 230V/50Hz motor shall be minimum 700 W and an overload cut out switch and no volt release shall be provided. 6. A set of barrel pump tubes shall be provided 7. The tubes shall be easy to mount to the motor. The motor power shall be transmitted to the pump shaft via an elastic self adjusting coupling. 8. Tubes made of special steel shall be used for pumping combustible liquids. 9. Tubes made of polypropylene shall be provided for pumping aggressive, low combustibility fluids, acids and alkalis. 10. Each pump tube set will comprise of a detachable outer tube and an inner tube inside which shall be the drive shaft. 11. Each pump will come with 1 each 1200 mm special steel tube and 1 each 1200 mm long tube made of polypropylene 	1 No.
10.10.2	Polypropylene filter to fit barrel supply pump	1 No.
10.10.3	<p>Portable supply pump made of special alloy steel, ex-proof 220V/50Hz, self priming, min.620 lt./min capacity, complete with hoses as per following specifications</p> <ol style="list-style-type: none"> 1. The pump shall be centrifugal type, single stage and self priming. The pump shall be safe to run dry. 2. It shall be designed to deliver aggressive liquids, mineral oil products and combustible liquids of explosion class IIA and IIB. 3. Pipe frame and all parts in contact with liquids shall be made of stainless steel. 4. It will come with DN50 threaded connection on the delivery side and cone type connection with DN50 nut on the suction inlet. 5. All sealing shall be made of Viton. 6. Frame shall be with foldable handles and hand protection. 7. It shall be provided with pressure-proof vacuum gauge with vibration absorption. 8. Motor shall be ex-proof of 400V/50Hz and min. 2.5 KW power output. 9. Grain passage shall be min. 10 mm in diameter. 10. Self priming shall be achieved up to min. 8 mts. 11. Delivery at 0.5 bar shall be min. 600 lit/min. At 1.5 bar it shall be min. 340 lit/min. 12. Dimensions will not exceed 650 x 400 x 475 mm and weight shall be max. 85 kgs. 	1 No.



10.10.4	Ex-Proof motor main switch, 400 V, with 20 m Ex-proof cable	1 No.
10.11	DECONTAMINATION EQUIPMENT:	
10.11.1	<p>Decontamination system for treating walk-in victims in the field. The system shall be designed for the simultaneous decontamination of two lines of people. In case of serious injury, casualties on stretchers shall be led through the decontamination system. Heated air and clean water will enter the tent in the opposite direction of the decontamination flow. The system shall be suitable to decontaminate min. 100 victims/hr. The system will comprise the following:</p> <p>Inflatable air shelter: 1ea Inflation shall be by air cylinder and in less than 2 minutes. The shelter shall be transportable by 2 people. It shall be provided with built in safety valves. It will stand up for minimum 4 days without re-inflation. Air frame design will allow automatic deployment. It shall be provided with a sun-roof cover for protection. It will have heater, air conditioner hook up sleeves. It will complete with fixing points for illumination elements. The following accessories shall be provided with the shelter:</p> <ul style="list-style-type: none">- 200/300 bar air bottle with sufficient capacity for inflation.- 600 l water belts for anchoring.- Lighting.- PVC ground sheet.- Two ea waste duct opening on the tent for the refuse- Sunroof canvass covering the full tent for sun protection, complete with pegs. <p>Size: 825 x 575 x 300 ($\pm 5\%$) cm Door opening: min. 220 x 230 cm Air capacity of frame: not less than 5.000 l</p> <p>Integrated shower system inside the shelter: 1 each 1 set will consist of 2 shower cabins and 4 undress/redress areas integrated in the shelter. Entry and exit curtains with zipper shall be present. It will have an inflatable basin size 200 x 500 x 20 cm ($\pm 5\%$.) It shall be designed to decontaminate victims in a minimum of time with maximum efficiency and safety. Ample space shall be provided for decontaminating victims laying on stretchers. Each shower cabin will have 1 entry, 1 exit. Dimensions of shower set: 200 x 500 x 220 cm ($\pm 5\%$).</p> <p>Shower strips: 2 each The shower strips shall be permanently mounted in the decon units. The strips will have two shut-off valves: One for clear water and one for mixed water with a decontaminant or detergent. The strip will have 4 nozzles for each integrated shower inside the shelter. Water flow and spraying capacity optimized for minimized water consumption and maximum efficiency in decontamination time.</p> <p>Decon pistol with spiral hose: 1 each</p>	1 No.



The decon spraying pistol shall be used for cleaning inside mass decon systems, decon cabins as well as other decon purposes.
The spiral hose shall be long enough to reach victims on stretchers.

The pistol will have one shut-off valve for clean water or mixed water with a decontaminant or detergent.

Closed water reservoir 3000 liter ($\pm 5\%$): 3 ea
It shall be for drinking water purposes and shall be pillow shaped of closed type.
The fabric shall be PVC coated from the inside and outside with 740 grams/m² ($\pm 5\%$).
Tear resistance shall be 3000 N/5cm ($\pm 5\%$).
It will have a 2" brass coupling and pressure relief valve.
Weight will not exceed 25 kgs and dimensions shall be 55 x 35 x 55 ($\pm 5\%$).

Water pump: 1 each
The pump shall be used for supplying pressurized water for the decontamination showers.
It will operate automatically without any switches.
It shall be lightweight easily transportable with a maximum weight of 35 kgs.
It shall be provided with a 10 l tank, pressure gauge and flexible connection of 1".
Capacity shall be 3.5 m³/hr ($\pm 5\%$) at 4 bars.
Electric motor with IP 65 protection 230 V.
Hot box: 1 ea
The Hot Box will deliver hot water for decon purposes in just a few seconds.
The unit and the tubing shall be of stainless steel.
It will have large handles and wheels for easy transportation.
Capacity range will enough for such deco tent
Maximum pressure shall be 6 bars.
It will have adjustable an automatic temperature control up to 70 deg. C, 61.000 Kcal/hr.
Diesel consumption will not exceed 8 l/hr
Max. weight 120 kgs and max

Water manifold: 2 ea
The manifold shall be used to split water from a single source to up to 4 different appliances.
The manifold will act as a control board for the complete water system.
It will have 4 outlets with valves, temperature and pressure gauges.
All pipes shall be of copper with brass joints in PE box.

Inducer: 1 ea
The inducer will add-mix the deacon liquid or detergent into the water system in pre-adjusted dosing, regardless of flow and pressure.
It will have a built in filter of 300 micron/50 mesh.

Waste pump: 1 ea
It will essentially be a drainage pump for pumping decontaminated water out of the decon basin.
The waste pump shall be resistant to chemical and non- explosive liquids.
The operation shall be fully automatic with electronic level switch control.
It will pump water down to 3 mm of water.
The pump will have automatic protection against dry running.



	<p>Capacity shall be 100 l/h ($\pm 5\%$).</p> <p>Fluid bag: 20 ea It shall be a foldable container, with of min. 3 layer polyethylene liner, for liquids with a capacity of 500 l ($\pm 5\%$). The liner shall be replaceable with dangerous liquids. It will have four carrying straps, one at each corner, for transportation. It will come complete with shut-off valve.</p> <p>Other equipment: Elevation grid: 2 ea Floor slats, elevation floor inside the cabin or tent. Made of LDPE. Size: 120 x 60 x 2.5 cm ($\pm 5\%$). Weight: max 2 kg. Conveyor: 1 ea For moving stretcher through decon unit, with 4 rolling bars. Lighting: 2 ea 220 V. LED Blower: 1 ea For inflating and deflating air shelter. 230 V, free air flow: 2800 l/min ($\pm 5\%$). Air conditioning system: 1 ea</p> <p>The unit shall be spilt designed. The condenser (outdoor unit) and the evaporator (indoor unit) interconnected with 3 m long flexible piping. Cooling power shall be min. 4 KW and air volume min. 640 m³/hr.. Other characteristics:</p> <ul style="list-style-type: none"> - Electronic system for operation with digital display of temperature and operating mode - Programmable 24-hour timer function - Air outlet with swing function - Removable air filter - Gradually adjustable air outlet direction - Compact design requiring minimum space for setup - Standard infrared remote control 	
10.11.2	<p>Vehicle decontamination system as per following specifications</p> <p>The unit shall be a high-pressure jet cleaner with integrated 2 lance operating mode. The integrated double pump module will guarantee fully automatic easy application of the decontaminant in a 2-wand spray mode. Using the 15 m (50 ft) application hose, which shall be stored on the attached hose reel, the object to be decontaminated shall be reached ergonomically correctly and treated all around without moving the module. Together with the solution tank, the unit will hold enough decontaminant to treat more than 400 m² of surface, equal to 5 vehicles. All components shall be integrated into a tubular frame. Carrying handles and two built-in wheels will enable easy movement and transportation. Total decontaminant solution shall be min. 40 l in tank + 20 l from jerry-can.</p>	1 No.
10.12	DETECTION EQUIPMENT:	
10.12.1	<p>Digital dosimeter as per following specifications</p> <p>Digital dosimeter: This device shall be used as a precise radiation measuring instrument for reliable detection and registration of radiation in order to ensure the personal safety of the user. It will have applications in civil defense, rescue operations, customs</p>	1 No.



	<p>operations, military forces, industrial radiography and nuclear medicine.</p> <p>Features:</p> <ul style="list-style-type: none"> - enhanced EMI immunity. - Clip fixing. - Individual personal alarming dosimeter. - Digital display for integrated dose or alternatively dose rate. - User selectable alarm levels for both dose and dose rate. <p>Technical specifications:</p> <ul style="list-style-type: none"> - Radiation detected: gamma and x-rays. - Measurement range: <p>Dose: 1 uSv-9.99 Sv Dose rate: 5 uSv/h-3 Sv/h - Audible alarms:</p> <p>8 audible alarms. Integrated dose. Dose rate. Dose overflow. Dose rate overflow at 3 Sv/h. Low battery. Defect.</p> <ul style="list-style-type: none"> - Max. Weight: 80 grams incl. battery. <p>Temperature range: -20 deg. C to 50 deg. C operational.</p>	
	B. CHEMICAL CONTAMINANTS DETECTION EQUIPMENT:	
10.12.8	<p>Portable detector for the detection of chemical warfare agents and toxic industrial gases as per the following specifications: Open loop ion mobility spectrometry; Automatic self test functions; Compact size, low weight (max. 800 grams); With integrated data logger for alarm information which can be read out by the push of a button or user interface program allowing access to the ion mobility spectrometer; The software would enable readout of the data logger, password reset and visualization of the sensor signals. Complete with Lithium ion rechargeable battery, pouch with neck strap, dust filter, functional test gas, power pack with cable, user interface program, data cable, charger and AA battery pack</p>	1 No.
10.12.9	<p>Gas detector pump with integrated squeeze counter and test tube holder as per following specifications: Gas detector pump with integrated squeeze counter and test tube holder. Min. 100 cm³ of air to be delivered at each squeeze. Complete with extension hose for measuring in inaccessible places. A set of spares to be supplied.</p>	1 No.
10.12.10	<p>Simultaneous gas test set based on tubes to be used with the gas detector pump as per the specifications. Each test set will consist of 5 test tubes arranged in parallel in a rubber sleeve. The test shall be provided with 4 different testing sets, as follows: Test set 1 for inorganic conflagration gases: hydrochloric acid, hydrocyanic acid, carbon monoxide, ammonia, nitrogen oxide. Test set 2 for inorganic conflagration gases: sulfur dioxide, chlorine, hydrogen sulfide, carbon dioxide, phosgene. Test set 3 for organic fumes: acetone, methane, toluene, hexane, perchlorethylene. Test set 4 simultaneous test set indicator substances: carbon monoxide, hydrocyanic acid, hydrochloric acid, nitrous gases, formaldehyde. Also, the contractor will provide 2 more test sets of min. 4 gases each of different types, custom made as per the request of the buyer. 2 spare tubes shall be provided for each type of gas. Draeger Simultaneous gas test set based on</p>	1 No.



	tubes	
10.12.1 1	<p>Gas detector for single H₂S gas as per the specifications</p> <ol style="list-style-type: none">1- The gas detector will measure the presence of H₂S gas in the environment.2- The measurement range shall be 0 to 30% in volume.3- A large LCD will provide continuous read-out.4- Large high contrast characters, graphic icons and amber backlight will provide clear display visibility in low light conditions.5- The display shall be segmented for direct gas readings. Also, peak reading indication shall be present.6- The device will have an on/off switch.7- The device will run min. 2.000 hours under a single charge.8- The device will have built in audible (90dB), vibrating & bright LED visual alarms.9- The alarms shall be activated for High/Low levels and shall be user selectable.10- The data logger shall be continuously on and will log min. the last 15 alarm events, stamping how long ago the event occurred, the duration of the event, and peak reading seen during the event.11- Event-logger should be viewed on PC or printed directly from the instrument to an infrared printer.12- Maximum temperature shall be not less than 60 deg. C.13- The case shall be made of impact resistant composite material. IP rating shall be IP65.14- Power input shall be by rechargeable Lithium-ion integral battery.15- The device will have UL, ATEX and CSA approvals.16- The size will not exceed 100 x 60 x 30 mm and the weight shall be max.90 grams	1 Nos.
10.12.1 2	<p>Oxygen gas detector as per following specifications</p> <ol style="list-style-type: none">1. The gas detector will measure deficiency of oxygen gas in the environment.2. The measurement range shall be 0 to 30% in volume.3. A large LCD will provide continuous read-out.4. Large high contrast characters, graphic icons and amber backlight will provide clear display visibility in low light conditions.5. The display shall be segmented for direct gas readings. Also, peak reading indication shall be present.6. The device will have an on/off switch.7. The device will run min. 2.000 hours under a single charge.8. The device will have built in audible (90dB), vibrating and ultra-bright LED visual alarms.9. The alarms shall be activated for High/Low levels and shall be user selectable.10. The data logger shall be continuously on and will log min. the last 15 alarm events, stamping how long ago the event occurred, the duration of the event, and peak reading seen during the event.11. Event-logger should be viewed on PC or printed directly from the instrument to an infrared printer.12. Maximum temperature shall be not less than 60 deg. C.13. The case shall be made of impact resistant composite material. IP rating shall be IP65.14. Power input shall be by rechargeable Lithium-ion integral battery.15. The device will have UL, ATEX and CSA approvals.16. The size will not exceed 100 x 60 x 30 mm and the weight shall be max.90 grams.	1 Nos.



10.12.1 3	<p>Carbon monoxide gas detector as per following specifications</p> <ol style="list-style-type: none">1. The gas detector will measure the presence of Carbon monoxide gas in the environment..2. The measurement range shall be 0 to 30% in volume.3. A large LCD will provide continuous read-out.4. Large high contrast characters, graphic icons and amber backlight will provide clear display visibility in low light conditions.5. The display shall be segmented for direct gas readings. Also, peak reading indication shall be present.6. The device will have an on/off switch.7. The device will run min. 2.000 hours under a single charge.8. The device will have built in audible (90dB), vibrating and ultra-bright LED visual alarms.9. The alarms shall be activated for High/Low levels and shall be user selectable.10. The data logger shall be continuously on and will log min. the last 15 alarm events, stamping how long ago the event occurred, the duration of the event, and peak reading seen during the event.11. Event-logger should be viewed on PC or printed directly from the instrument to an infrared printer.12. Maximum temperature shall be not less than 60 deg. C.13. The case shall be made of impact resistant composite material. IP rating shall be IP65.14. Power input shall be by rechargeable Lithium-ion integral battery.15. The device will have UL, ATEX and CSA approvals.16. The size will not exceed 100 x 60 x 30 mm and the weight shall be max.90 grams.	1 Nos.
10.12.1 4	<p>Gas measuring detector, LEL, H2S, CO, O2 as per following specifications</p> <ol style="list-style-type: none">1. The gas detector will have the capability to measure flammable and explosive gas, Hydrogen Sulphur, Carbon monoxide and Oxygen gas levels simultaneously.2. The flammable and explosive gas shall be measured in LEL, Oxygen in % and Hydrogen Sulphur and Carbon monoxide in ppm.3. The measurement range for each gas shall be as follows: For flammable and explosive gases 0 – 100% LEL; For Oxygen 0 – 30%; For Hydrogen Sulphur 0 - 999 ppm; For Carbon monoxide 0 - 999 ppm.4. A large LCD will provide simultaneous and continuous read-out of up to all 4 gases.5. Large high contrast characters, graphic icons and amber backlight will provide clear display visibility in low light conditions.6. The device will have an on/off switch.7. The device will run min. 18 hours continuously under a single charge.8. The device will have built in audible (90dB), vibrating and ultra-bright LED visual alarms.9. The alarms shall be activated for High/Low levels, STEL, TWA and low battery.10. The gas that shall be causing to raise the alarm shall be automatically displayed on the screen with indication on the gas level.11. The device will have up to 75 hours of data logging capability.	1 Nos.



	<p>12. Maximum temperature shall be not less than 50 deg. C.</p> <p>13. The case shall be made of impact resistant composite material. IP rating shall be IP65.</p> <p>14. Power input shall be by rechargeable Lithium-ion integral battery.</p> <p>15. The device shall be provided by sampling pump to draw gas from a distance. The pump will run by a motor powered by rechargeable battery. The pump shall be complete with a 3 m long hose.</p> <p>16. The device shall be certified to be used under group I and II explosive and flammable gas environment.</p> <p>17. The size will not exceed 120 x 70 x 40 mm and the weight shall be max. 250 grams.</p>	
<p>10.13</p>	<p>VARIOUS OTHER EQUIPMENT:</p>	
<p>10.13.1</p>	<p>Thermal imaging camera as per following specifications</p> <ol style="list-style-type: none"> 1. The thermal imaging camera (TIC) shall be used by Firemen and rescue personnel for the determination of hot spots during a fire intervention or chemically or radioactively hazardous event. The TIC will also be used for the video registration and documentation of the event. 2. The hot or very hot objects shall be observed in colour on the screen. 3. A temperature indicator with a range of 0 to 1000 deg. C showing the ambient temperature shall be present on the screen. The temperature shall be shown in figures and in graphic bar. 4. The TIC will have will have colour selection buttons for sensing automatically the heat and cold as well as to determine the heat transmission in constructions, machinery and electric panels. 5. The case of the TIC shall be covered with elastic rubber material. 6. It will operate min. for 7 hours and the recharging duration shall be max. 2 to 3 hour. 7. The TIC will have suitable handles or belts. 8. The weight of the camera will not exceed 1.5 kgs including the batteries. 9. Protection class shall be IP 67. 10. The TIC sensor will have the following characteristics: <ul style="list-style-type: none"> - Resolution 320X240 - Temperature shall be shown with color spots. - The hot spots shall be selected in either white or black colors. - It will have an automatic heat search mode. - It will have an automatic cold search mode. - It will have a full color mode. - It will have a 2x zoom feature. - Thermal sensitivity shall be 0,05°C or lower. 11. The camera shall be delivered with combined SD card recorder and with program for monitoring on screen. The video recordings shall be recorded and processed by Windows XP and Vista programs. 12. A 24 V vehicle charging connection shall be provided with the camera. 13. The camera will have the following additional features: <ul style="list-style-type: none"> - Size: approx. 210x160x100 mm. - View angle: min. 55° - Auto focus: 1m - ∞ - Screen: min. 3,5” TFT - Heat measuring range: -20°C ile 1000°C - Video signal: NTSC (color), PAL (color) 	<p>2 No.</p>



	<ul style="list-style-type: none"> - Operation temperature:-20°C to 80°C - Lens coating: Germanium Carbon 	
10.13.2	<p>Portable laptop computer with MIL standards as per following specifications</p> <ol style="list-style-type: none"> 1- A rugged computer shall be provided for the purpose of surveying and recording of images received from the front and rear cameras as well as mapping, navigation, reporting, data processing and communication. 2- The size of the display shall be min. 8.4”. 3- The display shall be for using in hard conditions 4- The computer will have numeric keys on its face. For simple usage the keys will have function assignment and programmable construction. 5- The resolution of the display shall be min. 800x600. 6- The computer will have a min. 800 MHz processor. 7- Memory capacity shall be min. 1 Gb. 8- Disc capacity shall be min. 80 Gb. 9- The computer will have an HSDPA module rendering possible data exchange through the GPS module and GSM telephone network’s 3 rd generation 3G high band width. 10- The computer will have 1 ea 10/100/1000 base Ethernet and PCMCIA Type II entry sockets. 11- The computer shall be rugged enough to work under open site conditions and under rain, and be resistant to vibrations and shocks. 12- The computer shall be delivered with a port multiplier and vehicle assembly kit. 	1 No.
10.13.3	Portable printer compatible with computer	1 No.
10.13.4	<p>Literature for hazardous chemicals as per following specifications</p> <p>The following literature shall be provided in hard and soft copy with each vehicle:</p> <ol style="list-style-type: none"> 1. ‘Emergency Response Guide Book for Hazardous Incidents’. The book will identify the names of the various agents or haz-mat sign via the UM numbers, the most important risks and the measures for first intervention as well as areas of evacuation. 2. A data base that offers an adaptation of the chemical and physical material data considering ‘description of risks’ and ‘elimination of risks’. It will cover: <ul style="list-style-type: none"> - Measures to be taken in case of leakage and fire with information on breathing and body protection. - Resistance of protective suits and materials. - Binding and extinguishing agents. - Test tubes. - Manufacturers addresses. - Bibliographical references. 3. A module that comprises the most important information on care and therapy of injured and contaminated persons within the rescue chain of qualified first-aid helper and hospital. 4. A booklet covering a list of physical data and administrative limit values as well as calculation of dosimetric sizes required for valuation of a radiation risk. 5. A module that makes possible an immediate evaluation of the effect of toxic gases on persons staying outdoors or indoors. 	1 No.



10.13.5	<p>Wind speed measuring device as per following specifications</p> <ol style="list-style-type: none"> 1. The wind speed meter shall be multi functional and will measure wind speed as well as temperature, barometric pressure, pressure trends up to 3 hours, altitude and clock. 2. The device will use an easy menu system that scrolls through min. 9 different environmental measurement conditions. 3. It will have an external temperature sensor with a water-proof casing that allows the user to gauge the temperature of water, snow and the open air. 4. A sensitive and user replaceable impeller technology will provide accurate wind speed information. 5. The unit will have the following additional measurement and functional features. All measurements shall be read on a large display: Wind chill. Current, average and maximum wind speed. Relative humidity. Dew point temperature. Real time clock. Data hold function. 6. Dimensions will not exceed 125 x 50 x 20 mm. Weigh shall be max. 70 grams. 7. The unit shall be delivered with a slip-on protective cover, a neck lanyard 8. Power shall be provided by a coin cell battery with an average life of min. 300 hours. 	1 No.
10.13.6	Compass with carrying case	1 No.
10.13.7	Positive Pressure Ventilator: Sound Pressure: 100 dbA @ 7 Mtrs. Airflow : Min 40000 CFM @ 10 Ft (3 Mtrs.) Power 18 Bhp.	1 No.
10.13.8	<p>Battery Operated Chainsaw: The chainsaw shall be of Stihl/Bosch/Hitachi/Cutters Edge/Stanley/ Doa / Echo Make. Weight of the equipment with cutting attachment & without battery shall not be more than 3.5 kg. Vibration Level shall not exceed 2.0 m/s² and the sound pressure level shall not be more than 90,dB/A. The battery system shall be Lithium Ion Technology only with minimum 150 Wh and the weight of the battery shall not exceed 1.5 Kg. The battery shall get fully charged within 60 minutes and the battery running time with full charge shall not be less than 35 minutes. Voltage Input shall be 230 V type. An LED type operator mode indicator shall be provided. The guide bar length shall not be less than 14” with 1.1mm groove thickness and ¼ pitch. A quick chain tensioning mechanism shall be provided and guide bar and chain shall be from same manufacturer. The lubrication of the chain shall be fully automatic with a speed controlled reciprocating oil pump. The oil tank capacity shall not be more than 220 ml</p>	1 No.
	<p>Battery Operated Cut Off Saw: The Battery operated cut off saw shall be of Stihl / Bosch / Hitachi / Cutters Edge / Stanley / Doa / Echo make only. Motor shall be copper wound DC motor without Brushes. Weight of equipment without battery & cutting attachment shall not exceed 4 Kg and with cutting attachment and back pack shall not exceed 13.5 kg. Output Shaft RPM shall not be more than 6700 RPM. A well designed spindle locking mechanism shall be provided for easy fitment of wheel. Electronic Coaster Brake shall be provided for immediate cutting off the electrical supply in case of release of trigger strictly for safety purposes. Vibration Level shall be limited to 3.5/s². Sound Pressure Level, Db/A shall not exceed 103 dB/A. Battery shall be Lithium Ion Technology. Battery Energy</p>	1 No.



	<p>Capacity shall be approx 1150 Wh. Weight of Backpack battery shall not exceed 7.5kg. Battery shall have Rain Protection. Battery Charging time shall be approx 2.5 hours. Battery Running time with full charge shall be min 1.5 hours. Voltage Input shall be 230 V. Operating mode Indicator shall be LED type. Charger base shall have active battery cooling technology. Abrasive Cutting wheels shall be provided with the tool. Diamond Cutting wheels to cut concrete with minimum 8” diameter of construction steel which can also cut building block, asphalt, granite etc. Complete machine, its wheel, battery backpack and charger shall be manufactured by the same company only. This shall be certified by the OEM. Cutting wheel thickness shall be min. 3 mm. Depth of Cut shall be min. 70 mm. Pressurized Water Container of minimum 8 Liter shall be provided.</p>	
	<p>Electrically operated Chain Saw: The saw shall be of Stihl / Bosch / Hitachi / Cutters Edge / Stanley make only. Motor shall be 230 V and min 2.3 kW Frequency shall be 50 Hz Machine shall have an inbuilt overload protection system. Machine shall have a slow start system to reduce starting impact. Fuse shall be slow blowing with a capacity of 10 Amps. Weight of machine shall not exceed 5 Kgs. Guide-Bar length shall be min. 18”. It shall be roller bearing type with 1.6mm groove. Complete machine, its guide bar & its chain shall be manufactured by same company. This shall be certified by OEM. Lubrication shall have oil channels in chain links to funnel oil directly to rivets recesses shall be stamped into drive links for better distribution of oil over sliding surface of guide bar. Lubrication shall be automatic type, driven by worm gear. Chain velocity shall be more than 17 m/s. Chain oil tank capacity shall not be more than 0.25L Chain tensioning shall preferably be done from side of the machine and not from front. Cutting capacity should be 185 CM circumference wood. Two spare chains and original Instruction manual shall be supplied with machine. Chain Brake shall be of the quick stop type with Electro-dynamic coasting brake system Name of the manufacturer shall be embossed engraved on the machine. Printing or stickers shall not be permitted. Test Report certifying all parameters shall be produced during supply. It shall be CE certified and manufacturer shall be an ISO certified company.</p>	<p>1 No.</p>
	<p>Petrol Operated Chain Saw: The petrol operated chain saw shall be of Bosch / Hitachi / Cutters Edge / Stanley / Doa / Echo / Stihl make only. The MOC of the engine shall be Magnesium die casting and it shall be petrol operated of Min. 90 CC. The power should be Min 7 HP / 5 Kw and the engine idling speed shall be not be more than 2500 RPM. The maximum engine speed (with guide bar & chain) shall not be more than 13000 RPM. Carburettor shall be diaphragm type and the fuel tank capacity shall not be more than 1 Ltr. The clutch shall be centrifugal type made of metal without liners. Dry weight without guide bar/chain shall not exceed 7.5 Kg & with guide bar/chain shall not exceed 9Kg. Guide-Bar length should be min. 25”. It shall be roller bearing type with 1.6mm groove. Complete Engine, its guide bar & its chain shall be manufactured by the same company only. This shall be certified by the OEM. Lubrication shall have oil channels in chain links to funnel oil directly to rivets recesses shall be stamped into drive links for better distribution of oil over sliding surface of the guide bar. Lubrication shall be automatic type, driven by worm gear. Chain oil capacity shall not be more than 375 ml Chain tensioning shall be done from side of the machine and not from the front. Chain shall be with min. 1.6 mm drive link thickness with a pitch of max. 10mm. Chain Material shall be High Carbon Steel grade with tempered teeth for strength & corrosion resistance. There shall be a witness mark for limit of sharpening. All important operations of the engine like choke, idle, & stop shall preferably be operated by single lever operation. Dimension of the machine shall not exceed 44 inches x 9 inches x 10 inches Cutting capacity should</p>	<p>1 No.</p>



	be 185 CM circumference wood. Two spare chains, one plug spanner with screwdriver and an original instruction manual shall be supplied with each tool. Name of the manuf. Test Report certifying all the parameters should be produced at the time of supply. Certifications: The product shall be CE certified and the manufacturer shall be an ISO certified company.	
	Petrol Operated Cut-Off Saw: The petrol operated cut off saw shall be of Cutters Edge / Stanley / Doa / Stihl make only. The MOC of the engine shall be Magnesium die casting and it shall be petrol operated of Min. 97 CC. Power should be Min 6.5 HP and the Idle Speed shall be not more than 2300 RPM. Max. Engine speed shall be not more than 9500 RPM. The carburettor shall be diaphragm type with fuel pump. Fuel Tank capacity shall not be more than 1.5 Ltr. Clutch shall be centrifugal type of metal without liners. Water attachment shall be provided and shall be of the same manufacturer. The capacity shall be min. 10 litres. Dry weight without cutting attachment and water attachment shall not exceed 13 Kg. Cutting depth shall be minimum 140mm. Filtration shall be by air filtration with cyclone air routing type with paper dual element filter. Starting shall have elastic material which will prevent starting shock from being transmitted during start up. It shall have a decompression valve and manual pull rope for easy starting of the engine. The rope shall be minimum 4mm diameter and shall have a double pawl arrangement for easy starting. Belt shall have semi automatic adjustment which shall be spring loaded. The belt shall be 4 PK Ribbed type. A wheel set arrangement shall be provided for easy movement of the machine. An adjustable wheel guard shall be provided with Rubber ring on both sides to reduce vibrations of the guard. The machine shall be capable of accommodating wheels of 14" & 16" diameter. Cutting blade shall be from the same manufacturer only. This shall be certified by the OEM. Water sprinkle nozzles shall be provided from both sides for better water circulation and cooling during cutting. A safety Interlock shall be provided with the trigger. A full choke and half choke arrangement shall be provided for quick starting in cold or hot climate. The machine shall be Rust proof. Spare White Diamond cutting wheels (2 Nos.), one plug spanner with screwdriver, and Original Instruction Manual shall be supplied with the unit. Name of the manufacturer shall be embossed on the machine. Printing or stickers shall not be permitted. Unit shall be CE certified and manufacturer shall be ISO certified. The product shall have DLG Certification	1 No.

General Requirements: The vehicles shall conform in all respect of the provisions contained in the M.V. Act 1988 and M.V. Rules 1989 or to any other statute modifications or re-enactments' thereon from time to time. All the equipment necessary for R.T.O.'s clearance shall be provided on vehicles. **All Equipments with a value of over Rs. 50,000 shall have an OEM authorization as per format attached at Annexure.**

Painting & Marking: The entire appliance will be painted in "FIRE RED" paint & thickness of 0.12 to 0.2 mm thickness, using double coat spray painting on the outside. Also on either side of the vehicle (logo of Client & name) monogram will be painted in golden yellow colour at suitable places. The chassis and wheel arches will be painted black. All the piping will be painted red. Two coats of anticorrosion & one zinc phosphate-priming coat will be applied before final painting of fire tender. The Vehicle will be clearly and permanently marked with the following, preferably on a metal plate attached in the driver's cabin & also near the pump operating control panel.

- ↪ Manufacturer's name or trademark.
- ↪ Year of manufacture.
- ↪ Engine & Chassis Nos.
- ↪ All instrument controls will be identified with nameplates.



(Schedule-11) Personal Protection Equipments (PPE)

Technical specifications:

11.1. Fire Fighting Helmet

- Flame retardant high temperature resistant copolymer plastic
- Long-term resistance to 140°C / 30 min, 250°C / 15 min
- European standards conformity (EN 443/1997)
- Polycarbonate anti-scratch and anti-fog coated visor
- Removable neck protector made of genuine leather (optional alu- carbon-fiber)
- Interior shock absorber made of polyurethane foam
- Integrated adjustment system (ranging from 52 – 62cm)
- Interior ventilating channels enable safe and comfortable work
- Luminescent and reflective tapes visible from both sides and in all conditions
- Flame retardant cotton chinstrap - tested to prevent skin irritations
- Ready to use with a full face mask

11.2. Fire Fighting Fireman boot:

Colour	Black / Yellow
Size range	Euro: 36 – 50 UK: 3½ - 14½ US: 4½ - 15½
Type of construction	Vulcanized Rubber Upper and Sole
Last / Sole Pattern	VSV / NJV
Recommendation	<ul style="list-style-type: none"> • Structural fire fighting • General fire rescue • Bush fire fighting
Compliance	<p>European Standard CE Approved – EN 15090 : 2006 (F2 IS HI3 P T CI) EN ISO 20345 : 2004 (SB P E CI SRA) F2 = Type 2 footwear for firefighters suitable for fire rescue, fire suppression, property conservation & etc. SB = Standard Basic Protection as per EN ISO 20345 / MS1599 IS = High Electrical Resistance Outsole HI3 = Heat Insulation Level 3 CI = Cold Insulation SRA = Slip Resistance on ceramic tile with Sodium Lauryl Sulphate E = Heel Energy Absorption P = Penetration Resistance T = Toe Protection HRO= Resistant to hot contact CSA Z195-02 / ASTM F 2413-05 Grade 1 Toe protection Penetration resistance 18 kV Electric Shock Resistance (ESR) protection</p>

Lining Material	• Extra comfort with woven cotton canvas
-----------------	--



Upper construction	<ul style="list-style-type: none">• Flame retardant upper with heat insulation• Reinforced rubber• Waterproof• High visibility with black and yellow contrast
Sole / Heel	<ul style="list-style-type: none">• Flame retardant rubber outsole• Fuel oil resistant sole suitable for inimical environment• Slip resistant vulcanized rubber sole• Excellent abrasion resistant for extra durability• Withstand 18kV of life current at dry condition• Heel energy absorption design to minimize heel impact• Catered to enter high temperature• Cold insulation sole construction
Steel Midsole	<ul style="list-style-type: none">• Non-corrosive stainless steel• Withstands pin & sharp objects
Steel Toe Cap	<ul style="list-style-type: none">• Non-corrosive coating treatment• Meets EN ISO 20345 impact and compression tests• Reliable protection in cold & hot environments
Chemical Resistant	<ul style="list-style-type: none">• Sole & Upper – Resistant towards mild acids and alkalines
Finishing	<ul style="list-style-type: none">• Hypalon lacquer coating for weather protection

11.3. Fire Fighter Anti Flash Hood

Name of the Product: Fire Fighter Anti Flash Hood

Product Code: SEAFH - 01 Style: PROVIN HOOD

Material Combination:

NOMEX (Aramide) Knitted Fabric

Design:

System6 Fire fighter Hood made from Nomex knitted fabric, Double layered stitched with inherently flame retardant sewing thread

The Fire Fighter hood is tested to EN 13911

Colour: Grey (Off -white) & Dull Black Size Available : Small , Medium , Large

11.4. Fire Fighter Gloves:

Material Combination:

Outer Shell: Heat Resistant FR Leather

Second Layer: Aramide Knit Fabric Lining: Membrane

Thermal Final Layer: FR Fleece fabric Retro reflective tri on Back side: 3Me

11.5. Fire Fighter jacket and Trouser

11.5.1. Jacket:

SIGNATURE & STAMP OF BIDDER



Outer shell: Nomex

Moisture Barrier: Membrane on FR nonwoven

Thermal Liner: FR felt quilted to FR modacrylic face cloth

Reflective tape: 3M tested to EN471

All accessories: Zippers, Velcro,elastic,threads buttons have tested for flame and heat resistance.

CE Confirms to 469

11.5.2. Trouser:

Outer shell: Nomex

Moisture Barrier: Membrane on FR non woven

Thermal liner: FR Felt quilted to FR modacrylic face cloth

Reflective tape: 3M tested to EN 471

All accessories: Zippers, Velcro,elastic,threads buttons have tested for flame and heat resistance

CE Confirms to EN 469

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Annexure-I

LETTER FOR SUBMISSION OF TENDER

SIGNATURE & STAMP OF BIDDER



To
Chief Executive Engineer,
Gujarat State Disaster Management Authority,
Block No. 11, 5th Floor,
Udyog Bhavan,
Gandhinagar – 382011,
Gujarat.

Sub: Submission for supplying of ----- to the Consignees as specified in Section IV of the Tender Document

Sir,

1. Having examined the details given in the invitation to bidder for qualification and brief note, the condition of contract, Specification and bill of quantities for the execution of above named work, we the undersigned, offer to execute and complete such delivery and remedy any defects therein in conformity with the conditions of contract, Specifications, Bill of Quantities and quoted amount in accordance with the said conditions.
2. We hereby certify that all the statements made and information supplied in the enclosed Tender Document and accompanying statements are true and correct.
3. We have furnished all information and details necessary for qualification and have no further pertinent information to supply.
4. We hereby apply for qualification for **“Supplying ----- to the Consignees as specified in Section IV of the Tender Document”**.
5. We undertake, if our Tender is accepted, to commence the delivery of the tendered **goods / stores / material(s)** immediately after the submission of Security Deposit, and to complete the delivery within the time stated in the Tender Document.
6. We agree to abide by this Tender for the period of 180 days from the date of opening the Technical Bid and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
7. We enclosed here with Cross Demand Draft(DD)/Bank Guarantee amounting to <Currency> Rs. _____(in words) i.e.<Currency>Rs. _____(in figures) towards Earnest Money Deposit which is to be absolutely forfeited by GSDMA should we not deposit the amount to Security Deposit specified in the Clause 6 of Section-II.
8. We enclose herewith DD in favor of GSDMA, Gandhinagar amounting to Rupees _____(In words) i.e. Rs. _____(in figures) towards Tender fees.
9. Unless and until a formal Agreement is prepared and executed this Tender, together with your written acceptance thereof, shall constitute a binding contract between us.
10. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this _____ day of _____ 2020

Signature _____

In the capacity of _____ duly authorized to sign tender for and on behalf of---



(IN BLOCK CAPITALS)

Address _____

Witness _____

Address _____

Occupation _____

Seal of Applicant

Date of submission Signature of Applicant.

Enclosures

1 _____

2 _____

3 _____

4 _____

5 _____



ANNEXURE –IA

Form of Bank Guarantee

(Earnest Money Deposit)

Whereas M/s _____ (here in after called the Bidder) is desirous and prepared to tender for work in accordance with terms and conditions of Tender Notice of (financial year) dated _____ and whereas We, _____ Bank; agree to give the Bidder a Guarantee for the Earnest Money Deposit.

1 Therefore, we here by affirm that we are Guarantors on behalf of the Bidder up to a total of Rupees _____ (in words) i.e. Rs. _____ (in figures) and we undertake to pay the Chief Executive Officer, Gujarat State Disaster Management Authority, Block No. 11, 5th Floor, Udyog Bhavan, Gandhinagar-382013, Gujarat upon his first written demand and without demur, without delay and without necessity of previous notice of judicial or administrative procedures and without necessity to prove the bank the defects or shortcomings or debits of the supplier any sum within the limit of Rupees

2 We further agree that the Guarantee herein contained shall remain in full force and effective during the period that would be taken for the acceptance of tender.

However, unless a demand or claim under this guarantee is made only in writing on or before the _____ (Date to be specified – will not be less than 180 days from the stipulated date of receiving the tender) we shall be discharged from all liabilities under the guarantee thereafter.

3 We undertake not to revoke the guarantee during its currency except with the previous consent of the Chief Executive Officer, Gujarat State Disaster Management Authority, Block No. 11, 5th Floor, Udyog Bhavan, Gandhinagar-382013, Gujarat in writing.

4 We lastly undertake not to revoke the guarantee for any change in constitution of the Bidder or of the Bank.

Signature and Seal of Guarantor

Date:

Bank:

Address:



ANNEXURE – II

Declaration Form & Certificate

A. Declaration Form

I / We hereby declare that I / We have read the Tender Documents published on website <https://www.nprocure.com> and accordingly submitted online price bid for Supplying Water Bowser to the Consignee's as specified in Section IV of the Tender Document.

I / We hereby declare that I / We have carefully studied the conditions of contract, specifications and other documents of this work and agree for execute the same accordingly.

(Signature of the Supplier with Seal)

Dated:_____

Place:_____

B. Declaration Certificate

I / We hereby declare that my / our near relative are not working in GSDMA or with GSDMA's Project Management Consultants.

(Signature of the Supplier with Seal)

Dated:_____

Place:_____



ANNEXURE – III

Memorandum Form

I / We hereby tender for the execution of the work in the underwritten memorandum for the Chief Executive Officer, Gujarat State Disaster Management Authority (here in before and here in after referred to as CEO, GSDMA) at the tendered rates specified by me / us in Schedule showing terms and rates of works to be carried out and in accordance in all respects with the specifications, and instructions in writing referred to in this tender and in clauses of the conditions of contract.

MEMORANDUM

1. Earnest Money Rs. _____
2. Security Deposit Rs. _____
3. Time Limit – (Give Schedule where necessary, showing date by which the various items are to be completed.) _____ Months

Should this tender be accepted, I / We hereby agree to abide by fulfill all the terms and provisions of the conditions of the contract so far as applicable and in default thereof to forfeit and pay to CEO, GSDMA the sums of money mentioned in the said conditions.

<This space has been intentionally left blank>



(Receipt No. _____ dated _____ from GSDMA in respect of sum Rupees _____ (in words) i.e. Rs. _____ (in figures) is forwarded herewith representing the Earnest Money, the full of value of which is to be absolutely forfeited to GSDMA should I / We not deposit the full amount of security deposit specified in the above memorandum in accordance with Clause 6 of Section-IV of the Tender Document, otherwise the said sum of above Rupees _____ (in words) i.e. Rs. _____ (in figure) shall be refunded.

\

Date:

Place:

Signature of the Supplier¹

Signature of the Supplier²

(Witness)³

Name and address _____

Occupation _____

The above tender is hereby accepted by me on behalf of Gujarat State Disaster Management Authority dated _____ day of _____ 2020

Signature of the CEO, GSDMA

¹ Signature of Supplier before submission of tender

² Signature of the Supplier at the time of execution of contract document

³ Signature of witness to Supplier's signature at the time of execution of contract document



ANNEXURE IV
Form of Bank Guarantee (Unconditional)⁴
For Performance Security
(Initial & Additional Security Deposit)

To,
Chief Executive Officer,
Gujarat State Disaster Management Authority,
Block No. 11, 5th Floor,
Udyog Bhavan,
Gandhinagar-382011,
Gujarat

WHEREAS [Name and Address of Supplier] _____
(Hereinafter called "Supplier") has undertaken, in pursuance of Tender Notice No. 2 GSDMA/Fire Fighting and Search & Rescue Equipments/2020 dated 13/03/2020 for “**Supplying -----**” (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 any Nationalized Bank as per Clause 6 of Section-II of the Tender Document for the sum specified therein as security for compliance with his obligations in accordance with the contract.

AND WHEREAS we have agreed to give the Supplier such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the supplier, up to a total of [Amount of Guarantee]⁵ Rupees _____ (in words) i.e. Rs. _____ (in figures) such sum being payable in the types and proportions of currencies in which the contract price is payable and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of [Amount of Guarantee]⁶ _____ as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified herein We here by waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract or of the works to be performed there under or of any of the contract documents which be made between you and the supplier shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition of modification. This Guarantee is valid until the twelve (12) months after the date of issuing the Purchase Order.

<This space has been intentionally left blank>

⁴ Bidders are not required to complete this form

⁵ An amount is to be inserted by the Guarantor, representing the percentage of the contract price specified in the contract and denominated either in the currency (ies) of the contract or in a freely convertible currency acceptable to the Employer

⁶ An amount is to be inserted by the Guarantor, representing the percentage of the contract price specified in the Contract and denominated either in the currency (ies) of the contract or in a freely convertible currency acceptable to the Employer



SIGNATURE AND SEAL OF THE GUARANTOR _____

Name of Bank _____

Address _____

Date: _____



ANNEXURE IVA⁷
Form of Bank Guarantee (Unconditional)⁸
For Performance Security
(Initial & Additional Security Deposit)

To,
Chief Executive Officer,
Gujarat State Disaster Management Authority,
Block No. 11, 5th Floor,
Udyog Bhavan,
Gandhinagar-382011,
Gujarat

WHEREAS [Name and Address of Supplier] _____
(Hereinafter called "The Supplier") has undertaken, in pursuance of Tender Notice No. 2
GSDMA/Fire Fighting and Search & Rescue Equipments/2020 dated 13/03/2020 for “**Supplying -----**
-----” (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 any Nationalized Bank for the sum specified therein as security for
compliance with his obligations in accordance with the contract.

AND WHEREAS we have agreed to give the Supplier such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of
the supplier, up to a total of [Amount of Guarantee]⁹ Rupees _____ (in words)
i.e. Rs. _____ (in figures) such sum being payable in the types and proportions
of currencies in which the contract price is payable and we undertake to pay you, upon your first
written demand and without cavil or argument, any sum or sums within the limits of [Amount of
Guarantee]¹⁰ _____. As aforesaid
without your needing to prove or to show grounds or reasons for your demand for the sum specified
herein We here by waive the necessity of your demanding the said debt from the supplier before
presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract or of
the works to be performed there under or of any of the contract documents which be made between
you and the supplier shall in any way release us from any liability under this guarantee, and we
hereby waive notice of any such change, addition of modification. This Guarantee is valid until the
Twelve (12) months after the date of issuing the Purchase Order.

We hereby affirm that we are aware of the stipulation for acceptance of our guarantee by Gujarat
State Disaster Management Authority, Gandhinagar that the said Employer will be for all matters

⁷ This form shall be used when the bank guarantee to be issued by the branch other than Gandhinagar /
Ahmedabad but operable at its Gandhinagar / Ahmedabad branch.

⁸ Bidders are not required to complete this form

⁹ An amount is to be inserted by the Guarantor, representing the percentage of the contract price specified in the
contract and denominated either in the currency (ies) of the contract or in a freely convertible currency
acceptable to the Employer

¹⁰ An amount is to be inserted by the Guarantor, representing the percentage of the contract price specified in the
contract and denominated either in the currency (ies) of the contract or in a freely convertible currency
acceptable to the Employer



relating to this guarantee shall deal with our bank branch located at Gandhinagar / Ahmedabad and all communication including invocation, notice of demand and such other matter deemed essential to be advised to and / or served on the said branch, on our behalf, of our bank, who without demur shall in accordance with the provisions of this guarantee.

We unequivocally surrender our rights to be informed / advised give notice in respect thereof in favor of the said branch of our bank in consideration of the aforesaid terms and conditions incorporated in this guarantee, we agree that for all the operative part and enforceability in the court of law. This guarantee shall be deemed to have issued by the said branch of our bank. The obligation under this guarantee shall be performed and discharged at Gandhinagar / Ahmedabad and the court located there at shall have jurisdiction for all the matters covered under and / or arising out of this guarantee.

SIGNATURE AND SEAL OF THE GUARANTOR _____

Name of Bank _____

Address _____

Date: _____

Confirmed by:

Bank Branch located at Gandhinagar / Ahmedabad

We here by confirm the above Bank Guarantee given by our Branch at _____ and will honor the same as if it has been issued by us.

Signature & Seal

_____ Bank.



ANNEXURE V

Indemnity Bond

(Duly Notarized on Appropriate valued Non-Judicial Stamp Paper)

M/S _____
resident of _____

Supplier of the goods / stores / material(s) / service shall at all times indemnify to Gujarat State Disaster Management Authority (hereinafter called the GSDMA) from and against all actions, suits, claims and demands through or made against the GSDMA in respect of this contract and against any loss or damage to GSDMA in consequence of any action or suits being brought against the supplier for any-thing done or omitted to be done in execution of the work in this contract agreement. From whatever causes arising and the entire responsibility for sufficiency of all the means used by the supplier for fulfillment of the agreement, provided always that in the event of all actions, suits, claims and demands through or made against the GSDMA in respect of work of this contract agreement shall notify the supplier for the same and the supplier shall conduct negotiations for settlement of any litigation that may arise there from at his own expenses.

In witness where of signed this _____ day of _____ Two Thousand _____.

Signature of the Bidder

Name of Bidder

Address of Bidder

Name of witness

Signature & Address of witness



ANNEXURE VI

Agreement

CONTRACT FORM

THIS AGREEMENT made on the _____ day of _____ 2020. Between Gujarat State Disaster Management Authority (hereinafter called “GSDMA”) on the one part and

_____ (herein after called “Supplier”) on the other part.

WHEREAS GSDMA is desirous that certain Goods / Stores / Material(s) and ancillary services viz., **supplying**----- and has accepted a bid by the Supplier for the supply of those goods/stores/material(s) and services in the sum of Rupees..... (in words Rupees _____) (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSES AS FOLLOWS:

- 1 In this agreement words and expression shall have the same meanings as are respectively assigned to them in the Terms & Conditions of Contract hereinafter referred to.
- 2 The following documents shall be deemed to form and be read and constituted as part of this Agreement viz:
 - a. Tender Notice, Technical Specifications, Qualification Criteria, Detailed Information & Instructions to Bidders, Terms and Conditions of the Contract etc. (Section I, II, III and IV and relevant Annexure)
 - b. The Schedules (Schedule A &B)
 - c. Bidder’s proposal as accepted by the GSDMA
 - d. Any and all addenda or modifications to the above.
- 3 In consideration of the payments to the made by the GSDMA to the supplier as hereinafter mentioned, the supplier hereby covenants with the GSDMA to complete works in conformity in all respects with the provisions of the Contact.
- 4 TheGSDMAherebycovenantstopaytheSupplierinconsiderationoftheprovisionofthegoods / Stores / material(s) 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 the goods and services which shall be supplied/provided by the Supplier are as under:

Sr. No.	Brief Description of Goods / Material/(s) & Services	Quantity to be Supplied	Unit Price	Total Price	Delivery Terms	Consignee Details

TOTAL VALUE:

DELIVERY SCHEDULE:

SIGNATURE & STAMP OF BIDDER



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

Signed, Sealed and Delivered by the

Said _____ (For GSDMA)

In the presence of _____

Signed, Sealed and Delivered by the

Said _____ (For Supplier)

In the presence of _____



ANNEXURE VII

(Please see Section II (1) (ii)

Manufacturer's Authorization Form

To
Chief Executive Engineer,
Gujarat State Disaster Management Authority,
Block No. 11, 5th Floor,
Udyog Bhavan,
Gandhinagar – 382011,
Gujarat.

Dear Sir,

We who are established and reputable manufacturers of ----- having
Factories at _____ do hereby authorize M/s
_____ to submit a bid, and sign the contract with you for the
goods manufactured by us against the Tender Notice No. 2 GSDMA/Fire Fighting and Search
&Rescue Equipments/2020 dated 13/03/2020.

No company or firm or individual other than M/s _____ are
authorized to bid, and conclude the contract for the above goods manufactured by us, against this
specific Tender Notice No. 2 GSDMA/Fire Fighting and Search &Rescue Equipments/2020 dated
13/03/2020

We hereby extend our full guarantee and warranty as per Clause 15 and 17 of the Terms and
Conditions of the contract for the goods / stores / material(s) and services offered for supply by the
above firm against the Tender Notice No.2 GSDMA/Fire Fighting and Search &Rescue
Equipments/2020 dated 13/03/2020

Yours faithfully,

(Name)

(Name of manufacturers)

*Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by
a person competent and having the power of attorney to legally bind the manufacturer. It should be
included by the Bidder in its bid.*



ANNEXURE VIII

Declaration of Ownership

1. I / We certify that the Bidder is sole proprietorship / partnership firm / private limited company / public limited company of which the registered office is located in _____ In the state of _____

2. The name, designation and address of the authorized signatory who is authorized to negotiate / sign / execute on behalf of the Bidder is asunder:

Name _____ Designation: _____

Address: _____

Email: _____ Telephone :(O) _____ (R) _____

Fax : _____ (Mobile) _____

3. The name, address and telephone numbers of the sole proprietor / all the partners / all the directors of the Bidder are asunder;

Sr. No.	Name	Address	Telephone	Fax	Email
			(O) (R) (M)		



SCHEDULE A – TECHNICAL BID

Checklist of the Documents to be submitted as part of submission of Technical Bid and Declaration

Sr. No.	Document / Certificate	Reference Para / Clause # & Section #	Attached	Your Page No.	Remarks
1	Manufacturing license (P.M.T. SSI No. / Industrial license / ISI Certificate / Factory Inspectors License) / Product permission (if applicable) / Registration Certificate with CSPO / SSI / KVIC / NSIC / DGS&D/MSME (whichever is applicable)	Para 8.2 of Section I	Yes / No/Not Applicable		
2	Partnership Deed / Memorandum and Article of Association (whichever is applicable)	Para 8.3 of Section I	Yes / No / Not Applicable		
3	Original Product literature mentioning all technical specifications & service manual	Para 8.5 of Section I	Yes / No / Not Applicable		
4	List of essential accessories required to operate the equipment / goods /stores / material(s) (if any)	Para 8.7 of Section I	Yes / No / Not Applicable		
5	Chartered Accountant's certificate in original for showing year wise production and sales for last three financial years	Para 8.8 of Section I	Yes / No/ Not Applicable		
6	Declaration & Memorandum Form	Para 8.9 of Section I, Annexure II & Annexure III	Yes / No / Not Applicable		
7	Valid Certificate of Exemption for payment of EMD	Para 8.10 of Section I	Yes / No / Not Applicable		
8	Power of Attorney (PoA) duly authorized by a notary public, if power is delegated for signing the Bid to other person by the Bidder	Para 8.11 of Section I	Yes / No / Not Applicable		
9	Confirmation of the Bidder to offer the product as per the Technical Specifications	Para 12.11 of Section I & Letter for Submission of Tender	Yes / No/ Not Applicable		
10	Proof of a single supply order of at least 50% of quantity required in a single contract during last five financial year & Proof of experience of three similar successfully completed works costing not less than the amount equal to 40%of the estimated cost during the last 5 years ending last day of the month previous to the one in which applications are invited.(Copy of Purchase / Supply Order and satisfactory note and performance certificate from the receiver needs to be submitted)	Point (i) of Section III	Yes / No/ Not Applicable		

SIGNATURE & STAMP OF BIDDER



Sr. No.	Document / Certificate	Reference Para / Clause # & Section #	Attached	Your Page No.	Remarks
11	All equipment should have at least BIS (Bureau of Indian Standards) or any international certification, which is equivalent or higher than the BIS certification for quality assurance.	Point (ii) of Section III	Yes / No / Not Applicable		
12	Documentary evidence in support of satisfactory operation of the equipment similar to the tendered item during the last 5 years prior to bid opening	Point (iii) of Section III	Yes / No/ Not Applicable		
13	Documentary evidence of manufacturing/Supplying and after sales services of products similar to the tendered item during the last 5 years prior to bid opening.	Point (iv) of Section III	Yes / No/ Not Applicable		
14	Authorized Dealer should have valid Agreement with the Manufacturer and also should have Manufacturer's Authorization from the Manufacturer effective from at least one year prior to the due date of this tender	Point (v) of Section III & Annexure VII	Yes / No / Not Applicable		
15	Audited Balance Sheet and Profit & Loss Statement of last three financial years (FY 2017-18, FY 2018-19 & FY 2019-20)	Point (vi) of Section III	Yes / No/ Not Applicable		
16	Tender document signed and stamped on each page	Entire Tender Document	Yes / No/ Not Applicable		
17	Declaration of Ownership	Annexure VIII	Yes / No/ Not Applicable		
18	Manufacturer's Authorization Certificate	Para 8.2 of section I & Annexure VII	Yes / No/ Not Applicable		
19	ISO Certificate along with the declaration of manufacturer of the item in the location certified by ISO	Para 8.4 of Section I	Yes / No/ Not Applicable		
20	Certified copies of license to use ISI mark for last one year as well as latest and valid license. In case, the certificates/licenses/permission are outdated or validity period is over, the proof of applying for renewal should also be attached. Such certificates will be considered if the renewal has been applied for within the time limit prescribed for the renewal of that permission/license/certificate under the relevant rules and further if such application for renewal is not specifically rejected by the competent authorities	Para 8.6 of Section I	Yes / No/ Not Applicable		

Note: The bidder must submit all the required documents strictly in accordance with the serial number mentioned above and respective page number must be duly filled in the above table.

SIGNATURE & STAMP OF BIDDER



It is verified that all the certificates / permissions / documents are valid and current as on date and have not been withdrawn / cancelled by the issuing authority.

I / We further undertake to produce on demand the original certificate / permission / document for verification at any stage during the processing of the tender.

Date:

Place:

Name of the Bidder

Designation

**SCHEDULE B – PRICE BID (to be filled ONLINE only) for each schedule items separately****Price Schedule Number:** _____**Name of the Equipment:** _____

Sr. No.	Details	Price in Rupees (Per Unit)
A	Ex-factory price main equipment/product/facility/material with standard accessories	
B	Packing Forwarding, Insurance and transport charges from factory to place of consignee & installation	
C	Total Price excluding GST (A+B)	
D	CGST in %	
	SGST in %	
	IGST in %	
E	Total Price inclusive GST (Rs./-)	
F	Total price in words inclusive GST (Rs. /-)	

Note:

1. All terms and conditions of supply shall be applicable as per tender terms. Any terms and condition enclosed with Price Bid shall be ignored or in such a case offer is liable to be rejected.
2. Price Bid must be quoted in above format with breakup. Quoting of consolidated price without breakup will not be considered.