BHAVNAGAR MUNICIPAL CORPORATION
, BHAVNAGAR

TENDER NO. BMC/FES/2025/NPROCURE/1

TECHNICAL BID

For

DESIGN, FABRICATION AND INSTALLATION OF FOAM FIRE TENDER 01 NOS, AS PER BMC TENDER SPECIFICATIONS AND CONDITIONS.

MILESTONE DATES

Sr. No	Description	Date
1	Online e-tendering	30/01/2025 to 21/02/2025 Till 18:00 hours
2	Last date of online submission of tender	21/02/2025 Till 18:00 hours
3	Online query	The tenderer who intend to raise their queries can do so only through mail address cfo.bmcfire@gmail.com & cfo-bmc@gujarat.gov.in on or before 07/02/2025 up to 10:00 AM
4	Pre Bid Date and Venue	07/02/2025 at 11:00 AM Venue : Office of Deputy Municipal Commissioner (General), Bhavnagar Municipal Corporation, Kalanala, Bhavnagar-364001.
5	Physical submission of hard copies tender documents along with EMD and tender fee.	30/01/2025 TO 28/02/2025 During 18:00 hours.
6	Opening of tech. bid	01/03/2025 at 12:00 hours. If possible
7	Opening of price Bid	Will be communicated to technically qualified

		bidder
8	Bid Validity	180 Days
9	Tender Fee (Non Refundable)	INR 15,000.00(Non Refundable)
10	EMD	INR.4,50,000/-
11	SD (Successful L1 bidder has to submit for Agreement purpose.)	5% of Final Approved Tender Value

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BHAVNAGAR MUNICIPAL CORPORATION
CHAPTER-1 - TENDER NOTICE

Online e-tenders with two bid system are invited for "**DESIGN, FABRICATION AND INSTALLATION OF FOAM FIRE TENDER 1NOS AS PER BMC TENDER SPECIFICATIONS AND CONDITIONS** from reputed qualified manufacturers and fabricators those who qualify below mentioned criteria.

ELIGIBILITY CRITERIA:

1. Registered manufacturing company/firm/ corporation in India of having manufacturing facility conforming to relevant national/international standards), factory license by Govt. of Gujarat or all over India.
2. Bidder shall be a manufacturer having at least 10 years experience in the field of fire fighting vehicles &shall be ISO certified (as per latest ISO standards).
3. Average Annual turnover of the company/firm/corporation in the last 3 financial years should be at least Rs. 10 crore. Certificate from chartered accountant shall be enclosed with the offer.
4. Bidder should have supplied as mentioned below similar Vehicle to Municipal Corporations, Nagarpalikas, or other government undertaking bodies in the last 3 years. And the list of vehicles supplied along with the certificate has to be submitted.
   (1) 02 work orders supplying 01 vehicles (2) 01 work orders supplying 02 vehicles
5. Bidder must have valid G.S.T. registration. Attach G.S.T. certificate.
6. Minimum solvency required 20% of Tender value from any nationalized bank of current year.
7. Bidder should enclose the drawing of Foam Fire Tender with Pump and Roll facility.
8. Manufacturer shall have full-fledged workshop with all equipment's, machinery and manpower.
9. The bidder shall have after sales service support in Gujarat.
10. Bidders shall give make & model of all items, & enclose technical specifications/brochures etc.
11. Bidder shall enclose authorization certificate from OEM of all aggregates/equipment's /accessories not manufactured by themselves, and are valued over Rs. 20,000 as per format at annexure "x"
12. A complete set of drawings, like general arrangement drawing, load distribution diagram, drawings of the tank/s (if any), shutter and drawer details (as applicable), wiring diagram, hydraulic circuit, and power transmission through respective pto/s shall be submitted with bid.
13. Self Declaration about Local Content: Bidder has to submit self Certification on what percentage of value addition will be local in this tender work if work is allotted to your agency/firm/company.

e-tender No.	Item	EMD %	Tender fee in Rs. (Non refundable)
BMC/FES/2025/NPROCURE/1	DESIGN, FABRICATION AND INSTALLATION OF FOAM FIRE TENDER 1 NOS AS PER BMC TENDER SPECIFICATIONS AND CONDITIONS	INR.4,50,000/	INR 15,000.00(Non Refundable) as per G.S.P.P. 2024

An earnest money deposit of INR.4,50,000/- (Validity 180 Days) in form of demand draft/ F.D.R./Bank guaranty and tender fee of INR 15,000.00(Non Refundable) in form of demand drafting favour of Municipal Commissioner, BHAVNAGAR Municipal Corporation, BHAVNAGAR, of any (except SBI) nationalized or schedule bank and Govt. of Gujarat approved bank shall accompany along with qualification's documents from 30/01/2025 to 28/02/2025 till 18:00 hours at the office of CHIEF FIRE OFFICER, FIRE & EMERGENCY SERVICES, NIRMALNAGAR, BHAVNAGAR. Technical bid of tender shall be submitted through RPAD/speed post up to 18:00 hours IST from 30/01/2025 to 28/02/2025, if possible technical bid will be opened on date 01/03/2025 at 12:00 hours IST onwards. **All eligibility criteria documents are mandatory to submit online as per tender specifications, terms and conditions otherwise tender will be rejected.**

Municipal Commissioner, Bhavnagar Municipal Corporation, Bhavnagar, reserves the right to accept or reject any or all tender(s) without assigning any reason thereof.

CHIEF FIRE OFFICER
FIRE & EMERGENCY SERVICES
BHAVNAGAR MUNICIPAL CORPORATION
BHAVNAGAR

CHAPTER-2

E.M.D. SCHEDULE

NAME OF WORK:DESIGN, FABRICATION AND INSTALLATION OF FOAM FIRE TENDER 1 NOS AS PER BMC TENDER SPECIFICATIONS AND CONDITIONS

Tender Fee: Rs. 15,000.00(Non Refundable)

Earnest Money Deposit: INR.4,50,000/-

An earnest money deposit of INR.4,50,000/- in form of demand draft/ F.D.R. and tender fee of Rs. 15,000.00(Non Refundable) in form of demand drafting favour of Municipal Commissioner, Bhavnagar Municipal Corporation, Bhavnagar, of any(except SBI) nationalized or schedule bank and Govt. of Gujarat approved bank shall accompany along with qualification's documents from 30/01/2025 to 28/02/2025 till 18:00 hours at CHIEF FIRE OFFICER, FIRE & EMERGENCY SERVICES, NIRMALNAGAR, BHAVNAGAR.

Details to be filled by Tenderer

Name of tenderer: _____

Address of tenderer: _____

_____

Name of business: _____

Details of EMD

Name of bank & branch: _____

D.D./F.D.R. no. & Date: _____

Amount in rupees: _____

Sign of tenderer

CHAPTER-3

TENDER SCHEDULE

Sr. No.	Item	Quantity
1.	**DESIGN, FABRICATION AND INSTALLATION OF FOAM FIRE TENDER FIRE VEHICLE AS PER BMC TENDER SPECIFICATIONS AND CONDITIONS**	01 Nos.

CHIEF FIRE OFFICER
FIRE & EMERGENCY SERVICES
BHAVNAGAR MUNICIPAL CORPORATION
BHAVNAGAR

CHAPTER-4

General Terms and Conditions for contract

1. Quoted price should be inclusive of all taxes and duties like G.S.T., other applicable levies, loading, unloading and stacking charge including first year full insurance, R.T.O. passing, at Bhavnagar Municipal Corporation, Bhavnagar -364001.
2. An earnest money deposit of INR.4,50,000/- (Validity 180 Days) in form of demand draft/ F.D.R. and tender fee of Rs. 15,000.00(Non Refundable) in form of demand drafting favour of Municipal Commissioner, Bhavnagar Municipal Corporation, Bhavnagar, of any nationalized or schedule bank and Govt. of Gujarat approved bank shall accompany along with qualification's documents from 30/01/2025 to 28/02/2025 till 18:00 hours at CHIEF FIRE OFFICER, FIRE & EMERGENCY SERVICIES, NIRMALNAGAR-BHAVANGAR. Tender without E.M.D. and tender fee will be rejected. Mode of dispatch of tender documents should be on by speed post or RPAD. **All eligibility criteria documents are mandatory to submit online as per tender's specifications, terms and conditions otherwise tender will be rejected.**
3. Tender shall be valid for a period of not less than 180 days after the date of opening tender price bid.
4. The award of contract will normally be made within 180 days after the date of opening tender price bid.
5. Tenderer should have to offer the firm prices in tender price bid for the prescribed item as per given in technical specification. Offer for the other item will not be considered and tender will be rejected.
6. E-tenderer shall have to submit the self attested photocopy with page numbers of following:
   1) Registered manufacturing company/firm/ corporation in India of having manufacturing facility conforming to relevant national / international standards), factory license by government of Gujarat or all over India
   2) Bidder should have cumulative experience during the last three years in executing contracts for the supply installation and commissioning of Foam Fire Tender .
   3) Bidder shall be a manufacturer having at least 10 years experience in the field of fire fighting vehicles & shall be ISO certified (as per latest ISO standards).
   4) Average annual turnover of the company/firm/corporation in the last 3 financial years should be at least Rs. 10 crore. Certificate from chartered accountant shall be enclosed with the offer.
   5) Bidder should have supplied as mentioned below similar Vehicle to Municipal Corporations, Nagarpalikas, or other government undertaking bodies in the last 3 years.
      (1) 02 work orders supplying 01 vehicles (2) 01 work orders supplying 02 vehicles
   6) Bidder must have valid G.S.T. registration. Attach G.S.T. certificate.
   7) Minimum solvency required is INR 30 lacs which is 20% of tender value from any nationalized bank of current year.
   8) Bidder should enclose the drawing of FOAM FIRE TENDER .
   9) Manufacturer shall have full-fledged workshop with all equipment's, machinery and manpower.
   10) The bidder shall have after sales service support in Gujarat.
   11) Bidders shall give make & model of all items, with technical specifications/brochures etc.
   12) Bidder shall enclose authorization certificate from OEM of all aggregates /equipment's /accessories not manufactured by themselves, and are valued over Rs. 20,000 as per format at annexure "X"
   13) A complete set of drawings, like general arrangement drawing, load distribution diagram, drawings of the tank/s (if any), shutter and drawer details (as applicable), wiring diagram, hydraulic circuit, and power transmission through respective pto/s shall be submitted with bid.

14) Self Declaration about Local Content: Bidder Has to give Self Certification on What percentage of Value addition will be local in this tender work if work is allotted to your agency.
    - Local Content means the amount of value added in India (In % of total value of item) which shall be the total value of the item to be procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

7. Clarification of bidding documents:
   A. The tenderer who intend to raise their queries can do so only through mail address cfo.bmcfire@gmail.com & cfo-bmc@gujarat.gov.in on or before as per the milestone dates post that no query will be addressed. Tenderer need to provide contact details of there firm along with query in e-mail, else will not be considered valid.
   B. The Tenderer may respond to any request for clarifications which he receives in the dead line as stated above, or queries raised during the pre-bid conference. BMC reserves the right not to respond to any/all queries raised or clarifications sought if, in their opinion and at their sole discretion, they consider that it would be inappropriate to do so or do not find any merit in it.

8. Pre-bid Meeting:
   A. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
   B. The Bidder is requested to submit any question in writing or by email, to reach the Tenderer before the meeting.
   C. The date, time and venue of the Pre-bid Meeting shall be as stated in milestone dates table.

9. Amendment of bidding documents:
   A. At any time prior to the deadline for submission of Bids, the Tenderer may, for any reason, whether an own initiative or in response to a clarification requested by a prospective Bidder modifies the Bidding Documents by issuing addendum.
   B. BMC Reserves the right to at any time prior to the deadline for submission of Bids, the Tenderer may, for any reason, whether an own initiative or in response to a clarification requested by a prospective Bidder modifies the Bidding Documents by issuing addendum. Any Addendum thus issued shall be part of the bidding documents pursuant and it will be binding on all bidder.

10. Opening and acceptances of Tender:
   A. The tender will be opened on date as stated in milestone dates (if possible). During tender opening bidder are requested to be present.
   B. Tender is two bid systems, so initially technical documents envelope will be evaluated and those who qualify in technical evaluation will be considered for financial bid evaluation.
   C. During the process of Bid evaluation BMC may call the bidders for discussion/clarification and also asked for requisite documents against documents already submitted.
   D. Technically Qualified Bidders will be evaluated on the basis of financial offer submitted and the Bidder who submitted the total value wise lowest amount (Lowest Offer) of shift will be considered the Successful Bidder or L1.
   E. The Municipal Commissioner, Bhavnagar Municipal Corporation reserves the right to reject all or any of the tender including the lowest tender or part of the tender or call for negotiation which in the judgment of the Municipal Commissioner, Bhavnagar Municipal Corporation does not appear to be in the best interest of Bhavnagar Municipal Corporation and the contractor shall have no cause of action or claim against the Bhavnagar Municipal Corporation, its officers, employees, successors, or assignees for rejection of his tender. However, decision of BMC in this regard will be final and it will be binding to bidder.

F. On failure of L1 to supply of order the L2 may be invited for negotiation and further formalities (as above) if required. In this case Security amount submitted by L1 will be forfeited.

11. Successful tenderer shall have to pay the security deposit @ 5% of tender value in form of fixed deposit receipt/Demand Draft/Bank Guarantee of any scheduled bank or nationalized bank and Govt. of Gujarat approved bank, for a period of 21 (Twenty One) months in the name of Municipal Commissioner, Bhavnagar Municipal Corporation, Bhavnagar, and shall have to enter into an agreement on a stamp paper of Rs. 300/- in case of SD (Security Deposit) is provided in form of DD (Demand Draft)/Bank Guarantee or stamp paper of size 4.9% of SD Amount in case of SD is provided in form of FDR(Fixed Deposit Receipt)/or Any other form of Saving Instruments. The S.D. will be refunded after 21 months, after getting satisfactory performance & warranty service of vehicle by successful bidder.

12. Tenderer shall have to complete contract within 180 days after getting firm work order otherwise penalty will be charged as per norms of Bhavnagar Municipal Corporation. In case of late delivery penalty will be charged 0.5% of the tender value of delayed quantity per week. Maximum amount of penalty shall not exceed 10% of the tender value. In case of more delay, B.M.C shall terminate the contract and blacklist the agency for 03 years. For competing in any type of tender of B.M.C in that case, S.D. will be forfeited. Final decision of same will be taken by Municipal Commissioner, Bhavnagar.

13. 100% payment will be made after trial, testing and receipt of FOAM FIRE TENDER as per prevailing norms of Bhavnagar Municipal Corporation, Bhavnagar.

14. Insurance shall be the responsibility of tenderer. Tenderer shall provide coverage for all items against transits risk, accident to acquisition, transport delivery up to destination and accident in trial and testing.

15. Any modification or any changes in work or technical specifications done by Fire Department in charge and tenderer have to follow these changes without any dispute and argument. (no extra cost will be given for the modifications or changes). Bidder has to submit drawing of FOAM FIRE TENDER and only after approval from BMC official, they should take for manufacturing.

16. Tenderer have to furnish all drawings and certificates and photocopy of bills those are required and demanded by engineer of Bhavnagar Municipal Corporation.

17. Tenderer can contact for more information and details regarding tender to the Fire Department, Bhavnagar Municipal Corporation, Bhavnagar-364001.

18. E-tenderer should have to fill up firm price clearly in the price bid. No price escalation will be given in any circumstances.

19. Unit of rate:

The unit of rate shall be on number basis.

20. Inspection:

Inspection at workshop will be carried out by authorized representative of Bhavnagar Municipal Corporation and third party inspection will be carried out. Third party agency will be decided by Municipal Commissioner and inspection pre delivery on site at agency cost & 3rd party inspection. Successful bidder has to borne Third Party Inspection Cost, they have to pay directly to Third Party Agency for their Fees.

21. Price preference:

Price preference will be given to SSI/MSME units as per Govt. norms.

22. Jurisdiction:

In the event of any dispute or difference arising out of this e-tender/ contract, the jurisdiction of the court shall be Bhavnagar (Gujarat) only. While executing the agreement, the supplier shall be governed at all times by all laws, regulations etc., in force in Gujarat State.

23. Dispute:

In the event of any problem, dispute or difference arising out of or under this contract, the decision of the Municipal Commissioner, Bhavnagar Municipal Corporation, Bhavnagar, will be final and binding to the parties to this contract. Any dispute not resolve shall Be refered to arbitration tribunal as per the gujarat public works contracts disputes arbitration tribute act 1992

24. Conditional offer will not be accepted and same will be treated as non-responsive.

25. Bidder shall be submitted anti-blacklisting Affidavit as Per Annexure.

26. E-tender agreement:

The e-tenderer shall be required to enter into an agreement or due performance of the contract. The stamp duty on all documents to be executed in connection with this work to be entered into shall be borne by supplier. The security deposit (SD) in form of F.D.R./bank guarantee shall be deposited for required value. The contract agreement will have to be executed on a stamp paper of appropriate value as per value orders in force for the time being.

(1) E.M.D. of the first lowest firm/company will be forfeited if they fail to enter into agreement within prescribed time limit for entering into agreement.

27. Guarantee/warranty:

The supplier at the time of entering into contract shall give a guarantee against technical and manufacturing defects in **FOAM FIRE TENDER** supplied and free replacement of defective materials at his own cost up to a period of 12 months from the date of receipt of **FOAM FIRE TENDER** .Supplier shall provide a warranty of 12(twelve) months from the date of supply.

28. Extension for delay:

If the supply is delayed by (1) force majeure, (2) serious loser damage by fire, (3) strike, bandh, curfew, rally, heavy rains, flood, cyclone, earthquake, lockdowns, or natural calamities occurs,(4) electricity staggering,(5) any other case, which is beyond the control of contractor. Commissioner will decide period of delay extension. However Final Decision whether to grant time extension will be of Commissioner, Bhavnagar Municipal Corporation, Bhavnagar.

29. Municipal Commissioner, Bhavnagar Municipal Corporation, Bhavnagar, reserves the right to accept or reject any or all the e-tender(s) without assigning any reasons thereof and to split up the parallel this work more than one party.

30. If possible, technical bid will be opened on date 01**/03/2025 from 12:00 hours IST** onwards. And after evaluation of technical bid, successful technically qualified bidders will be informed date and timing of opening price bid.

31. Delivery schedule:

Delivery schedule for supply of FOAM FIRE TENDER shall be as under:

Sr. No.	Lot size (quantity)	Delivery period
1.	01 nos.	180 days from Work Order Issued

32. Penalty schedule:

penalty will be charged 0.5% of the tender value of delayed quantity per week. Maximum amount of penalty shall not exceed 10% of the tender value For competing in any type of tender of B.M.C in that case, S.D. will be forfeited. Final decision to give any relaxation in penalty will be taken by Municipal Commissioner, Bhavnagar. Bidder is requested to check with R.T.O. Bhavnagar city for approved model.

Sign of e-tenderer

CHIEF FIRE OFFICER
FIRE & EMERGENCY SERVICES
BHAVNAGAR MUNICIPAL CORPORATION
BHAVNAGAR

TECHNICAL SPECIFICATIONS

OF

FOAM FIRE TENDER

TECHNICAL SPECIFICATIONS

CHASSIS

The Foam Fire Tender shall be fabricated on **Mahindra Make or Ashok Leyland or equivalent Make 28 Ton GVW (6 x 2), minimum 5050 mm Wheelbase, minimum 200 BHP Engine, OEM Cabin Chassis** considering space requirement for specified all accessories / tools accommodation. The Vehicle chassis **BS-VI Model** is to be purchased and delivered duly fabricated by Successful bidder own their risk and responsibility.

GENERAL

The FT including all its accessories & equipments shall be designed & manufactured in strict compliance with the specifications given below, as well as other relevant Indian / International standards where applicable & as per sound engineering practices. The FT shall be designed to effectively & efficiently carry **6000 Liters of Water & 4000 Liters of Foam, a CE certified / UL listed Firefighting pump** with a discharge capacity of **4000 LPM @ 10 Kg/cm^2 & 300 LPM @ 35 Kg/cm^2** driven through heavy duty Power Take Off (PTO) unit, **an UL listed Water cum Foam Monitor of approximately Minimum 1500 GPM,** equipment & accessories, etc. All the equipments & accessories will be fixed on the appliance in a compact, neat & ergonomic manner & will be easily & readily accessible for immediate use during emergencies. Due care should be taken to ensure that all aggregates are designed for ease & comfort of the operator.

DESIGN & CONSTRUCTION

The FT shall be designed to be as compact as possible with ease of accessibility to all the service parts. The 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. The FT shall be supplied complete with all the equipments & accessories mentioned in these specifications. The material for construction shall be used with a view to combine lightness with strength & durability. No form of wood, (timber or ply) shall be used anywhere in the body construction. All parts which form water ways, come in contact with water or are made from materials that are prone to corrosion, shall be treated with a good quality anti-corrosion system. The vendor should submit weight distribution chart along with design of supporting structure shall be submitted along with design calculations to department with the technical bid, failing which, bid shall be summarily rejected.

PUMPING SYSTEM

The pump fitted on the FT will be **a CE certified / UL listed Fire Fighting pump** , centrifugal pump, capable of delivering, not less than **4000 LPM @ 10 Kg/cm^2 & 300 LPM @ 35 Kg/cm^2**. The pump shall be of CE certified or UL listed, with **GM** as MOC. The pump shall be provided with an OEM priming system of **Fully Automatic Reciprocating / Watering type**. The primer shall be capable of working even if left dry over extended periods. The pump will be of rigid construction & shall be modularly designed for ease of maintenance. It shall be capable of delivering its full performance with all strainers (external & internal). **The details of the pump such as its make & model, supported with technical data should be attached with the offer.** The discharge of the pump shall be routed to the outlets for hand lines and monitor fitted on the top. The other construction details shall be as per the following specifications.

Pump Suction Inlet

The suction inlet of the pump should be capable of being connected either directly to hydrant discharge outlets through headers or to the water tank of the vehicle. It should be of a suitable size to give the rated output of the pump, but not less than **140 mm.** The inlet should be of round-thread type & will be provided in such a way that it is convenient to take water from outside sources like open wells. The connection from the water tank to the pump will be suitably sized **(min 140 mm)** to allow full pumping at the rated output. A valve of good quality will be fitted between the suction inlet of the pump & the water tank. Stainless Steel strainer will be fitted inside the tank on the pipe outlet to pump.

Pump Discharge Outlets

There shall be 4 outlets of 63 mm each of standard size (63 mm) with screw down type delivery valves, having female instantaneous couplings. These shall be provided for operating the pump via hand lines connected directly to the pump. In case the pump has a single outlet in its volute design, it shall be divided into 6 connections by means of a manifold. The manifold shall be strictly cast type & material shall be of SS / Light Alloy. One connection will be taken from the manifold to the monitor discharge outlet with a suitably sized flange connection with the manifold. This is to ensure that in case of a leakage at any time in the first valve, the second valve fitted near the monitor base will hold the pressure.

Pump Mounting

The pump will be rear mounted to ensure maximum hydraulic efficiency when working from open water sources. It shall be mounted in such a way that vibrations from the drive line are not transmitted to the control panel. The pump shall have at least four mounting points to ensure that the complete load of the system is evenly distributed. The mounting shall be done on heavy "C" sections only. The mounting will be secured to the chassis members by bolting. Welding of the mounting shall be strictly avoided. The rotating drive flange shall be provided with a guard so that injury is minimized during operation or maintenance of the pump. The guard shall be bolted and easily removable.

Pump Material of Construction

The Pump casing, impeller, delivery outlets, etc. shall be made of CF8 (SS 304) / GM. The wearing rings & other parts that may be subject to frequent wear should be of renewable type. The impeller shaft will be of SS & will be carried in anti-friction bearings as per the pump manufacturer's standard design. The impeller neck rings & impeller rings will be renewable type. The bearing housing shall be of Cast Iron for better heat dissipation. An easily accessible drain valve made of SS304 will be provided at the bottom of the casing to enable easy draining of the complete system.

Pump Shaft Sealing

Shaft sealing will be self-adjusting type. It shall be as per pump manufacturer's standard design.

Electronic Pump Control Panel

Electronic Smart Control Panel should be CE Certified. The Smart Control Panel should embed a LED backlit **6 inch** display, which should indicate and control the following in real-time. **The Control Panel should be integrated with vehicles CAN-BUS network to BS-VI vehicle.**

The Panel shall have Monitoring Parameters such as Low, High and Compound Pressure Indication, Engine and Pump RPM Indication, Pump Running hours, Water Level Subsystem with Bar Type Display, 100 level resolution with Percentage, Special markers for Empty, ¼, ½, ¾ and Full, Real time Tank Volume Indication in Liters. The Panel shall have Control Parameters such as Control Panel should have Key Inputs with Red and Green illuminated LED switches for Increment and Decrement of Vehicle Throttle to operate the Pump at its rated capacity. Further these switches shall be activated by a master switch to prevent accidental operation. The Control Panel Interlocks such as Vehicle RPM should automatically go to IDLE when water level falls below 5%. Separate blue illuminated switch for direct IDLE RPM from any Engine RPM, Emergency Buzzer alert for drivers cabin, ON/OFF Control for Pump Room Light and Rear Spot Light. Operating System should have Multiple Language options (English and Hindi). The Control Panel should be provided with Isolated Panel Supply Voltage which should be regulated from Battery voltage fluctuations and spikes through a separate isolated power supply. All Connectors should be IP67 or higher rated. The front bezel of Control Panel should be IP65 rated. The pump compartment shall house the following MANUAL Control Valves ergonomically designed:

- ✧ Pump to Delivery Outlets
- ✧ Pump to Monitor

- ✧ Pump to Tank Filling
- ✧ Foam Tank to Pump
- ✧ Pump to Cooling line
- ✧ Tank to Pump Suction
- ✧ Outside source to Pump suction
- ✧ Water Level Indicator
- ✧ Foam Level Indicator

Note: The above mentioned connections are the min. requirement. Other connections / controls as may be required can be provided by the manufacturer. The grouping of the pipelines & valves as well as the complete system layout shall be discussed with the inspecting officers at the time of the stage inspections.

Pump Priming System

To ensure that the priming system is compatible with the pump, only an OEM (pump manufacturer) supplied priming system shall be incorporated with the pumping system. The system shall be **Fully Automatic Reciprocating / Watering type,** which is capable of lifting water from 7 Mtrs. depths within 30 seconds when tested using 100 mm suction hose on bare pump without piping. 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 to the extent possible & shall be constructed of suitable materials to prevent corrosion due to salty / brackish water.

Hose Reels

Two high-pressure hose reel at appropriate location of the vehicle to facilitate operation of the high-pressure section of the Fire Pump shall be provided. The hose will be prevented from kink. Working pressure of hose will not be less than 50 bar. The high-pressure hose reel will hold 30 meter of hose in one length, terminating in a high-pressure for Jet / Fog gun. Plumbing between the pump and hose reel will have clean and unobstructed waterway of not less than 20 mm throughout without any restriction.

POWER TAKE OFF

The PTO for the pump will be of **Firefly' FireHawk / VAS** make of suitable ratio for the rated output of the pump & the torque of the vehicle. The switch for engaging the P.T.O. will be provided in Driver's cabin. Inspection & maintenance hatch of removable type shall be provided at suitable places for gaining access to gear box or PTO. 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 Units in the system. **PTO engage lever would get engaged pneumatically and also get disengaged by air pressure and for this purpose a switch controlling both the operations would be provided in the driver's cab.** An alternative system as stated above to get the PTO engaged mechanically would also be provided so that in case of pneumatic failure lever could be engaged by mechanical means. Necessary supports for PTO Units, propeller shafts coupling, universal joints etc. for power input to and output from PTO Units shall have to be provided by vendor. The drive assembly components (shafts, coupling etc) shall be dynamically balanced and the 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 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. 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.

WATER TANK

The Water tank shall be of minimum **6000 Ltrs.** capacity & shall be suitably mounted on the chassis in such a way that the weight distribution is optimized. In addition a 2% expansion space shall be made in the tank over & above the water capacity. The tank will be fabricated out of **GRP (Glassfibre Reinforced Polyester)** plates of min. 6/8 mm thick all over. The tank shall be of welded construction & will be die-pressed on all sides to prevent distortion & to ensure torsional rigidity. The entire Water Tank shall be fabricated in a single mold type with baffles. **The Water Tank shall have 15 Years Warranty against Corrosion, Joints & maintenance. The Water Tank shall be of Rosenbauer (Austria) /Magirus (Germany) or Marce (South Africa) make only.**

Baffles

The tank will be suitably baffled to prevent surge when the vehicle is cornering or braking. The baffle plates shall be of minimum 5 mm thickness and single mold type. The baffles should be so designed that they do not buckle under any circumstances during braking & cornering.

Tank Mounting

The water tank will be mounted on the vehicle on a **subframe using Rubber Metacones.** This subframe will be made from Anti-Corrosive Treated **MS 6"** section and will be bolted with the chassis using the high tensile bolts. **'U' Bolts shall not be used for mounting of tanks on vehicle.** The rubber metacones shall facilitate to absorb the jerks and bending torsions in expansion as well as compression mode without high deflection. The manufacturer shall provide complete design data of metacones and subframe including the load calculations and metacone quantity sufficiency. Tank will be mounted on the chassis in a manner keeping in view the proper load distribution on the axles. The baffles will be arranged in a manner to facilitate easy cleaning of the tanks. The tank will be mounted on cross bearers to counteract stresses caused by chassis flexing. The mounting shall permit the full contents of tank to flow to the pump. The bottom of the tank shall be sloped towards rear. Suitable lifting eyes shall be provided on top of the tank to enable it to be lifted off the vehicle for maintenance. The bottom of the hooks shall be suitably reinforced with pads to avoid stress on the tank top plate. Sides of tank should be die-pressed to give additional strength & stiffness so that it does not distort due to chassis flexion.

Connections for Filling

The tank shall have a filling orifice of 150 mm & an inspection & maintenance manhole of 450 mm at the top. The cover for this port shall be of hinged or threaded type as per the manufacturer's standard design & will be clearly marked with the words (either etched or raised) "WATER". This port will be used for filling the water tank from overhead storage tanks. Apart from the above, two more filling connections will be provided on the sides of the tank terminating in filling connections of 63mm male instantaneous couplings made of GM or SS material incorporated with a strainer. The header & the line will be suitably designed to ensure that the inflow of the water into the tank is sufficient to maintain the output of the pump while the tank is being replenished from other vehicles or from hydrant lines. 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. One connection will also be provided for filling tank from pump itself. Connection will be taken from pump manifold & will be controlled by a shut-off valve.

Draining, Cleaning & Repairs

A 50 mm diameter drain line with a valve will also be provided to drain the tank for maintenance. A cleaning hole of 250 mm will be provided at the bottom of the tank & will be taken down to a point below the chassis without reducing the effective ground clearance. The connection shall ensure that the water is discharged as far away from the wheels of the vehicle as possible, to reduce the chances of tire slippage. Suitable lifting lugs shall be provided on the shell of the tank to enable it to be lifted off vehicle for maintenance.

Overflow

One overflow pipe of suitable diameter shall be fitted to the tank. The diameter of the overflow pipe shall be determined as per the filling connections provided. However it shall not be less than 100 mm diameter in any case. In case the inlets provided at the sides are more, the overflow pipe diameter should be suitably changed to accept the additional flow. As a thumb rule, the diameter of the overflow pipe should be two times the sum of all incoming pipes. For example, if there are two header pipes are of 100 mm diameter each, the overflow pipe should be of 200 mm diameter. This is to ensure that the tank does not get unnecessarily pressurized. The overflow pipe will be taken up to 2 inches higher than the top of the vehicle from the inside of the tank & shall be cut at an angle of approx. 45 degrees. The pipe shall be covered by a suitable flanged cover above tank to ensure no spillage of water during movement of vehicle.

Miscellaneous

The tank will be connected to the Pump with a butterfly valve for ease of operation. The tank shall be hydraulically tested at 0.5 kg/cm^2 pressure to find out if there are any leakages. This test may be carried out in the presence of the inspecting officers or done by the manufacturers as per their own internal quality program. However due care must be taken to keep all records of such tests for verification at the time of final inspection. Inlet line in the tank shall have an adequately strong deflector plate, which will avoid incoming jet of water from hitting tank side/roof. All plumbing shall be reasonably accessible for maintenance purposes. Screwed bends, joints shall be avoided as far as possible. All joints will be flanged type & shall have O ring sealing. Rubber gaskets shall not be used anywhere in the plumbing. All outlets and inlets from tank shall be taken by installing nozzles of suitable length and reinforcement pads.

FOAM TANK

Tank shall be of 25**00 Liters capacity,** fabricated from **GRP (Glassfibre Reinforced Polyester)** only & die-pressed on all sides to ensure torsional rigidity. It shall be suitably baffled & the baffle plates will be moulded. Bottom of tank will be sloped towards the rear. Suitable lifting eyes will be provided. It will have a filling orifice of 150mm & an inspection manhole of 450 mm. One additional filling connection of 50 mm will be provided on the sides of the tank with a ball valve for replenishing the tank from an outside source. Tank shall be fitted with sludge trap with a cleaning hole of 250 mm dia & a 50 mm drain pipe with valve & plug incorporated in it for maintenance a system for ensuring that sludge does not enter into the pipeline, will be provided. The tank shall be provided with automatic venting & breather will be provided on the top. All joints will be flanged & have 'O' ring sealing only. **The Foam Tank shall have 15 Years Warranty against Corrosion, Joints & maintenance. The Foam Tank shall be of Rosenbauer (Austria) /Magirus (Germany) or Marce (South Africa) make only.**

FOAM PROPORTIONING SYSTEM

An around the pump Foam Proportioning system (RTP) with a selector valve to induce 3 or 6% of foam compound shall be provided. The Proportioner shall be installed in such a way that it will not be liable to mechanical or other failures. The selector valve will have three settings. Each upward setting will result into an equal increase in the foam compound flow rate. The linkages of this purpose shall be as simple as possible to avoid distortion due to chassis flexion. It shall be reliable & shall not require frequent calibration checks.

Electronic LED Indicators

Electronic LED Water & Foam Level Indicators indicating the tank levels as **EMPTY, ¼, ½, ¾ and FULL** shall be provided on the pump control panel. These levels shall be indicated by number of glowing LED lights (no LED Lights means and empty tank, All LED Lights means full tank). The indicators shall sense the fluid level in the tank with help of a pressure sensing probe. The indicators shall be located on the rear pump control panel in such a manner that the Operator / Firemen can easily view the tank levels while being away from the vehicle. **Repeater Secondary Level Indicators shall be provided in the driver's cab** to help the crew members to check the fluid level from the cab while travelling.

PIPING & VALVES

Complete pipeline circuit on the vehicle including **water lines & fittings will be of SS 304 material** only, including all water lines. All valves up to 2" size will be lever operated ball valves & all valves above 2" size shall be normal ball / butterfly valves. Valves shall be L&T or Audco make only. Seats of the valves shall be easily replaceable, readily available & at least 2 sets of spare seals will be provided for each size of valves. 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 flow chart and schematic diagram shall be made and submitted with the technical bid failing which the bid shall be summarily rejected.

FOAM MONITOR

Foam Monitor made of SS 304 having discharge capacity of 1500 GPM @ 7 bar shall be mounted on the top of the fire tender in such a manner that it can be operated by a crew member. The monitor shall be capable of traversing through 360° in horizontal plane, elevating from horizontal to 75° and depressing from horizontal to not less than 15° and fully rotation in both directions. The monitor shall be capable of discharging water to an effective distance of not less than 70 - 75 meters & projecting the foam discharge to an effective distance of not less than 50 meters in still air conditions when operated at rated pressure. **Monitor shall be provided with variable flow Jet / Spray type Nozzle.**

BODY WORK

The FT shall be supplied with original single cabin with seating arrangement for Driver + Officer.

Enclosed accommodation for four persons will be provided in the separate crew cabin. The cabin will be double compartment with partition & with one communication window. The driver seat & Fire officer seat will be of OEM supplied. All the seats will have foam cushion and will be covered with best quality Rexene. One door on each side will be provided on the crew compartment. Doors will be fitted with safety glasses and be of sliding type window. The glasses on crew cabin windows and doors will be fixed in aluminium sections. The cabin doors will be hinged type opening outwards & hung forward with catch latches. The cab and lockers will be of composite construction with sufficient rigidity and reinforcement and will be kept as light as possible. Pressed sections of **MS square tubes** of sufficient strength shall be used for the cabin construction as far as possible.

The rear **equipment lockers superstructure (after the cabin)** shall be **fabricated in MS. Superstructure shall be constructed with welding work & panelled with aluminium. Roof panels shall be made of aluminium padded plates.** The roof should be strong enough for being walked-on and must be sufficiently supported. The intermediate walls and shelves shall be constructed from aluminium sheets panelled to the structure with welding work. The outside panelling shall be done from 16 SWG aluminium sheet. Complete flooring shall be of 16 SWG and the inside of lockers shall be done from 18 SWG Aluminium Plain Sheet. The vehicle shall be covered from top with 16 SWG chequered plate having rainwater channel at both side. The sheets of the outer panelling will be bonded / glued to the skeleton framework. Rivets / screws shall not be allowed. The area over the tank will be suitably treated for slippage by chequered plates or anti-skid material. The doors of the cabin will be fitted with safety glasses & winding type regulators. The 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. The cabin will be as per the latest international standards & ergonomically designed so that the crew members are comfortable in transit as well as are able to use the vehicle in an efficient & comfortable manner.

Seating

The driver & officer seat shall be provided by chassis OEM. The crew shall have individual seating, with each seat fitted with brackets for placement of Breathing Apparatus in an upright position. The seats shall be of the 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 theatre 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 recline, to improve rider comfort & an auto-pivot & return headrest for rapid seat egress. The side cushions shall be easily removable,

to accommodate all types of SCBA. The seats shall have right shoulder seat belt release & a chrome swivel bezel. If there is space available, the seats shall be fitted with flip-up armrests.

Lockers

Suitable lockers will be provided for storage of equipments & accessories wherever required. Size and number of locker shall be decided at the time of stage inspections. The lockers will be constructed in a modular way so that in case if the configuration needs to be changed, it can be achieved without major modifications. All equipment stored in lockers will be strapped / clamped in a neat & convenient manner so that it has an identified place. All lockers will be suitably labelled so that each item will have identification when it is required to be accessed. For all water fittings like branch pipes etc. quick release type couplings or snap clamps of spring steel (as per the manufacturers standards) will be provided which shall enable the operator to locate the desired equipment instantly & save valuable time.

Roller Shutters

For the easy operation of the Fire tender roller-shutters covering the equipment lockers shall be installed on both sides of the appliance. 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, maintenance free, weather & corrosion resistant & capable of opening in every position of the vehicle even in rough terrain & on slopes. A spring mechanism will be fitted so that the shutters are held up at any point of opening. It would be easy to operate & shall ensure that the shutters can be easily pulled down. The sections of the shutter shall be powder-coated / anodized to a smooth finish & aesthetic look. Guide rails should support the shutters over the entire length on both sides & make them corrosion free. The shutters shall have a sturdy locking mechanism which will 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. **The shutters shall be of MCD – France make only.**

PERIMETER & UNDERBODY LIGHTING

LED lights shall be installed under the cabin & body around the perimeter of the vehicle. The lights shall be strategically placed to illuminate the immediate ground area around the vehicle. There shall also be provided LED lights at the highest level of the vehicle for area lighting in the vicinity of the vehicle. 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 and two at the rear). These shall be of the high intensity type with regular and intermittent flash pattern.

ELECTRICAL EQUIPMENT

Adequate lighting arrangement shall be made in all compartments. All equipment lockers will have internal lighting arrangement automatically switched on and off by opening/closing of doors/shutters. 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 used in the vehicle 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 color 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 the 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 the controls for electrical system will be provided near the driver's seat. The battery will be placed in a totally enclosed box. Radio suppression of the electrical system, which is sufficient to ensure positive operation of radio equipment without interference, should be provided. Arrangement shall be made on dashboard opposite to the fire officers' seat to fix a mobile wireless set. Power supply shall be provided from vehicle battery. Mechanism shall be provided to charge the vehicle battery from external power source. The mechanism shall have AUTO EJECT function to detach the charging power cable from the vehicle charging point upon starting the ignition

of the vehicle. This system shall also have an inbuilt air compressor which will charge the air tanks of the fire truck while it is parked. The power connection cable plug shall be provided at a suitable location on the truck so that easy attachment of power cable is possible. Details of such system with picture, brochure and make / model number of such system shall be provided with the bid.

LADDER GALLOWS

Tipping Type Ladder gallows shall be provided on the roof with Ladder for fixing a 10.5 mtrs aluminium double extension ladder. The design shall be such that the ladder can be released without difficulty without having to climb on top of fire tender roof by one man. Means will also be provided for locking the ladder when stowed.

FITTINGS & ACCESSORIES

Following accessories will be provided on the appliance:

a) LED Light bar of minimum 75-100 watts with P.A. System, Hooter Amplifier & Speakers.
b) Reputed make Reverse Parking Audio Sensors & Camera with 4" / 6" Display in the Driver's Cabin.

ACCESSORIES TO BE SUPPLIED WITH MULTIPURPOSE FIRE TENDER (ANNEXURE – A)

	Description	Qty
1	Aluminium Trussed Type Double Extension Ladder 10.5 m	1
2	PVC Suction Hose with Light Alloy Round Threaded Couplings to suit the Pump Inlet – 2.5 m	4
3	Delivery Hose **(Type B), ISI & KITE marked,** 63 mm x 15 meters with BIS marked couplings	10
4	Suction Strainer for Item 2	1
5	Basket Strainer for Item 2	1
6	Dividing Breaching made of Gun Metal	1
7	Collecting Breaching made of Gun Metal	1
8	Pair of Suction Wrench	1
9	Hose Bandages Rubberized	12
10	Branch with Revolving Head	1
11	Short Branch Pipe Light Alloy (fitted with tips of 12 mm, 16 mm, 20 mm & 25 mm) ISI Marked	4
12	Adapter for 100 mm suction female screw coupling and 63 mm male instantaneous Adaptor double female instantaneous 63 mm Adaptor double male instantaneous 63 mm	1 1 1
13	Nozzle Spanners	1
14	**Self-Contained Breathing Apparatus** as per **Appendix-A**	2
15	Fire Proximity Suit made of **DUPONT NOMEX** fabric with coat, pant, gloves, hood, fireman helmet and boots. (CE marked)	2
16	First aid box for 10 persons	1
17	Rubber gloves	1
18	Axe, large	1
19	Spade	1
20	Pick axe	1
21	Crow bar	1
22	Sledge hammer (6.5 Kgs)	1
23	Hydraulic jack 30 Tons Capacity	1
24	Fire hook	1
25	Tool Kit	1
26	Foam Branch FB-5X with Pick up tube	1
27	Foam Branch FB-10X with Pick up tube	1
28	Fireman Helmet	2

29	Gum Boot	4
30	Fire beater	1
31	**PYROJET Fire Hose** with Inbuilt Jet Curtain Nozzles flow 900 LPM – 63 mm x 15 meters	2
32	Firemen Axe	1
33	Wheel Chocks	2
34	Wheel Spanner with Tommy	1
35	Strecher	1
36	Fog Nozzle with Extension Applicator with Fog Head	1
37	Hand Operated Combitool as per **Appendix-B**	1
38	Battery Driven Positive Pressure Ventilator as per **Appendix-C**	1
39	**Multipurpose Hand Held Nozzle** shall be made of Light Alloy Extruded Construction as Per ISO 64430WP Grade. It shall have twist type control for straight jet, spray and wide angle fog, operating efficiently at low pressure of 3.5 bar. It shall have facility to operate Solid Jet & Fog simultaneously or independently and discharge more than 500 LPM for jet and 300 LPM for spray (combined discharge capacity – 800 LPM) @ 5 bar pressure. The horizontal Jet Throw in still air shall be around 35 mtrs at 5-6 bar pressure. It shall have provision for change over to flush mode without shutting-off the flow. It shall have superior design of rubber grip, twist shut off from fog to stream and provision of teeth to provide dense fog. It shall have a Control Lever for ON-OFF Position and a 63 mm size inlet connection. A pistol grip handle for better grip shall be provided. The nozzle shall be hard anodized to prevent corrosion and wear. The weight of the nozzle shall be max. 3 Kgs. The nozzle shall be CE certified to EN15182.	2
40	**Multi Flow Hand Held Nozzle** shall be made of Light Alloy Extruded Construction as Per ISO 64430WP Grade. The nozzle shall be hard anodized to prevent corrosion & wear. It shall have a twist type control for Straight Jet, Spray and Wide-Angle Fog. It shall have arrangement for selection of five flow ranges from 350 to 900 LPM by twist of a dial on the nozzle. The horizontal Jet Throw in still air shall be around 35 mtrs at 7 bar pressure. It shall have Pistol Grip handle to provide for superior grip control to the operator. It shall have provision for change over to flush mode without shutting-off the flow. It shall have a replaceable spinning teeth ring for generating a dense fog curtain, a ball valve type handle for shutting off the flow and a 63 mm Inlet connection as per IS: 903. The nozzle shall be CE certified to EN15182.	2
41	Portable Thermal Imaging Camera as per **Appendix-D**	2
42	Hand Breaking Tool as per **Appendix-E**	1
43	Telescopic Light Mast as per **Appendix-F**	1

DOCUMENTS REQUIRED AFTER COMPLETION OF ORDER

The following documents shall be submitted in 2 sets.

1. As built drawings of tender
2. As built drawings for tanks
3. Flow diagrams
4. GA & cross sectional drawings, characteristic curves & other details for pumps.
5. As built Drawings for Installation of PTO Unit.
6. As built Line diagram for electrical circuits.
7. All inspection and testing records for tank, pump, PTO, piping, valves, monitor etc.
8. Three sets of Operating and instruction manual for the tender.

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 of DEPARTMENT. The tank shall be warranted against leakage for a period of 5 years after supply in writing.

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 as & when desired by DEPARTMENT.

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 DEPARTMENT. However, the technical committee of DEPARTMENT shall have absolute power & may reject the offer without assigning any reasons whatsoever.

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

Surface Preparation

Once the paneling is completed, all the outside surfaces should be painted with a good quality paint system, like Du-Pont, PPG, and Standox etc. This should be poly-urethane (PU) based paint with a life of minimum 10 years. The bidder shall guarantee fade resistance of minimum 5 years from supply even if the vehicles are kept in the open.

Vehicle Exterior Paint

The complete vehicle (all exterior surfaces) and monitor should be painted with at least 2 coats of zinc phosphate 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. 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 Line Paint

Water lines should be painted with of zinc phosphate epoxy primer each of 50 microns DFT and two coats of polyurethane finished paint each coat of 50 microns DFT. Water lines shall be painted red in colour.

Details Required

The bidder should 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 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.

Marking / Name Plates & Owner's Emblem

All the lockers / cabins shall be provided with Stainless steel Name Plates with letters itched on it boldly indicating the content. Owner's emblem in original colour together with name (in Hindi and English) as below shall be written in golden yellow colour on both sides of the vehicle.

Other Miscellaneous Works

The inside of lockers shall be painted in pale cream / grey colour. The chassis frame shall be painted black and wheel arch shall be painted grey/white. 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 and capacities.
4. Capacity of water tank and foam compound tank in litres, DCP & CO_2 in Kgs.
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 DEPARTMENT'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 (photographic evidence) 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 titled to either side at an angle of 27º 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 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.

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 should be achieved in less than 23-24 seconds.

Articulation Test

The vehicles shall be tested for articulation & will not show any signs of stress during this test. The clearance in the wheel wells will be checked for tolerances.

Hydraulic Testing

All the piping will be subjected to hydraulic test pressure of 15 Kg/cm^2 for a period of min. 10 minutes. The pump casing will be subjected to a hydraulic test pressure of a minimum 21 Kg/cm^2. In case of the high pressure section, it will be tested at a minimum of 45 Kg/cm^2.

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.

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.

TECHNICAL SPECIFICATIONS OF SELF-CONTAINED BREATHING APPARATUS AS PER APPENDIX-A

Supply of the complete Self-Contained Breathing Apparatus set.

CERTIFICATION

The set on offer must have the following certification:

EN137:2006 – SCBA Set
EN136:1998 – Face mask
PESO / CCEO Approval for Cylinder

COMPOSITION OF SET

The complete set must contain at least the following:

A cylinder valve
A reducer
A medium-pressure tube
A quick connect fitting
A demand valve
A full face mask
A High pressure tube
A low-pressure warning whistle
A pressure gauge
A flexible and adjustable backplate
A buddy breathing system.

FACE MASK

The full-face mask must have the following specification. The visor must be manufactured from Polycarbonate and be scratch and abrasion resistant. It should have an anti-fogging and distortion-free lens with a wide field of vision of above 91%. An integrated microphone for communication system is a must – No Exception

In the mask there must be a Heads-Up Display indicating orientation, time, low-voltage, SOS instructions, remaining use-time of cylinder, cylinder pressure, ambient temperature, and barometric pressure indication. To affect this function a lithium battery pack must be used and said battery pack must be able to be replaced. An integrated personal safety device must be standard with the set – No exception the alarm will enable personnel members to locate and assist a person when the alarm sounds. The system must be configured to raise a loud audible alarm after 30 seconds of non-movement. The alarm should gain in loudness every 15 seconds if not attended to. The mask shell must be able to seal off completely and not allow polluted air to come into the mask. A flame resistant five-strap flame-retardant Kevlar head net, comfortable and easy to wear, avoiding clipping hair must be fitted to secure the mask on the operator's face

DEMAND VALVE

A demand valve having an emergency air purge valve, donning switch, and automatic demand sensor for maximum air usage is required. The valve must have a 360 degrees quick joint.

MASK RESPIRATOR REDUCER

The set must be designed to effect balanced pressure that keeps the Medium Pressure system at 7.5 bar. The output flow rate must be greater than > 1000 l/min. A safety valve must be fitted that automatically operates when the reducer fails. To keep the output pressure from 9.9 bar to 15 bar.

BACKPLATE

The backplate of the set must be fire resistant and be flexible to allow for movement. The backplate must be able to adjust for additional wearer support

ALARM DEVICE AND PRESSURE GUAGE

The set must be fitted with a pressure gauge that shows the air pressure in the cylinder and have a range of 0 – 400 bar. An integrated low-pressure warning whistle must be present that will warn the wearer that the cylinder pressure is low. The whistle must sound at no less than 90 dB

BUDDY BREATHING SYSTEM

The set must be fitted with an additional connection to allow a user to connect to the system to obtain air. This connector must be a double-quick connector compatible with any manufactured SCBA on the market.

AIR CYLINDER

The BA Set must be equipped with Steel Air Cylinder which must be PESO Approved.

TECHNICAL SPECIFICATION OF HAND OPERATED COMBINATION TOOL AS PER APPENDIX-B

- Pump handle must be able to rotate 360° and must be foldable.
- Spreading opening not less than 350 mm.
- Minimum spreading force 25 mm from tips (acc. to EN13204) not less than 30 kN.
- Maximum spreading force not less than 1350 kN.
- Squeezing force not less than 30 kN.
- Maximum cutting force not less than 250 kN.
- Cutting round bar (acc. to EN13204) not less than 24 mm.
- Central bolt head and nut mounted directly to steel blades resulting in less blade separation (optimum cutting performance) and flatter design for better access.
- To improve durability the blades must be machined from high grade tool steel and not forged.
- Maximum working pressure not less than 720 bar.
- Weight ready for use shall not exceed 9.5 kg.
- Dimensions (LxWxH) shall not exceed 600 x 285 x 200 mm.
- To assist the operator and increase safety while working in dark or poorly lit circumstances the carrying handle shall have at least six integrated LED lights.
- Certified according to EN13204 norm by an independent test institute.

TECHNICAL SPECIFICATIONS OF BATTERY OPERATED POSITIVE PRESSURE VENTILATORS AS PER APPENDIX-C

Positive Pressure Ventilator fan must have following Parameters.

	Technical Parameters of Positive Pressure Ventilator	**Specifics**
1	Size of Blade (Inch/mm)	24''/610
2	Ingress Protection	IP-67
3	Max CFM	16,300 AMCA Equivalent (27,694 m3/h)
4	Open Air Flow	34,000 CFM (57,600 m3/h)
5	Battery	Li-Ion
6	Sound Decibels	91 dB @ 10 ft (3 m)
7	Tilt	0-180 degrees
8	Size in mm	642 x 642 x 261

Positive Pressure Ventilator must have minimum battery cycle life up to 500 discharges. Positive Pressure Ventilator must be light weight and ergonomic, which shall be easily carried and set up by one person. Features of battery capacity indicator must be incorporate in to appliance. Positive Pressure Ventilator must have 100 % charging capabilities within 3 Hours, However, It must be charged 90 % within minimum Two Hours. Bidder has to enclosed requisites technical literature of Appliance, without the bid shall be rejected.

TECHNICAL SPECIFICATIONS OF PORTABLE THERMAL IMAGING CAMERA AS PER APPENDIX-D

Thermal Imaging Camera must be portable and it can be Hand Held or it can be easily attached on Fire Crew's uniform without any difficulty. Portable thermal imaging camera must have compact design as well as it must be water proof having IP 67 Rating. The High Resolution Thermal sensor must be of 320 x 240 having 76,800 temperature pixels for maximum image clarity and sensitivity. The Portable camera must have capabilities to scan a large area to identify hazards and heartbeats in seconds. It must have 32-Degree field of view. The Thermal Imaging Camera must able to work for minimum 3 Hours without attaching any power supply cable. The Thermal Imaging camera shall meet the following additional specifications:

Details	Technical Parameters
Frame Rate	>15 Hz Fast Frame
Flash Light	300 Lumen LED
Display	2.4'' Color
Display Screen	Corning® Gorilla® Glass
Thermal Sensor	320 x 240
Pixels	76,800
Temperature Range	-4 to 1,022 (-20 to 55O C)
Operating Temp	-4 to 140F (-20 to 60C) No time limit
Operating Temp (10 min)	-4 to 185F (-20 to 85C) Up to 10 minutes
Operating Temp (2 min)	-4 to 225F (-20 to 107C) Up to 2 minutes
User Interface	Self-Contained Device with 3 button Navigation
Detection Distance	12 inches to 1,800 feet
Field of View	Wide, 32 Degree FOV
Thermal Sensitivity	< 70 mK
Temp. Display Scale	Fahrenheit or Celsius
Battery	Up to 3.5 Hours Thermal Imaging

The camera must have 3 Options (FIRE, SURVEY & COLOR) and must be have minimum storage capacity of 4 GB internal Driver (>4,000 Images). Bidder has to enclosed requisites technical literature of Thermal Imaging Camera, without the bid shall be rejected.

TECHNICAL SPECIFICATION FOR HAND BREAKING TOOL AS PER APPENDIX-E

Hand Breaking Tool must have functions of Prying, Wring, Chiesling, Cutting, hewing. Tool must have capabilities to break thought that buildings that made of masonry of cement, metal sheet, and many composites. Tool must have multiple functions with the design of Anti skidding handle which can be retractable and the interchangeable work heads. Tool must have following features:

- Tool must be easy to maintain and hence, it must have nickel Coating and must be made of High Strength forging steel.
- Consumption of Time and efforts must be diminished and has special design which can concentrate the force on the rescue point.
- Design of the tool must be portable so it can be suitable for the crowd area.

Tool must have following Parameters:

Parameters	Specifics
Impact Stroke	442 mm
Impact Hammer Weight	6.7 Kgs
Dimension	Not exceeds 782 x 72 x 70
Weight (Complete Set with Attachments)	Not exceeds 20.0 Kgs

Bidder has to submit Authorization Certificate from OEM of Hand Breaking Tool as per Annexure-X without which bid shall be liable for rejection.

TECHNICAL SPECIFICATIONS OF TELESCOPIC LIGHT MAST APPENDIX-F

Locker Mounted Light Mast pneumatically operated through the vehicle air tank should be fixed rigid-ly on suitable side of the vehicle in such a manner that it should not be damaged due to any jerks. It should be extendable up to a steady height of approx 5-6 mtrs from ground level and fitted with 2 x 100 W LED Lights (38,600 Lumens) through a Fixed Light Support Head. A handle shall be provided at the bottom of the mast to rotate the mast to Left or Right. Permanent connections for taking power supply from a power source set through spiral wire in protective sleeve shall be provided along with the earthed sockets at the Light Supports. Mast shall be made of extruded seamless aluminium construction, anodized in natural color. The LED Lamp must have integrated electronic thermal management (ETM) which reduces LED Temparature for long life and reliability. The Lamp must comply with below Parameters:

PARAMETERS OF LED LAMP	
Quantity of LEDs	56
Colour of Light	Cool White
Operating Temperature	-40 Celsius ~ +80 Celsius
Lifespan	50.000 hours
Housing material	Die-cast aluminium
Housing colour	Black

Protection class	IP68
Approval	CISPR25, CE/RoHS
Lamp dimensions	12.20” W x 7.09” H x 2.17” D (310 x 180 x 55 mm)
Lamp weight	2.55 Kgs (5.62 lbs)
Current	8,33 amps (at 12 V DC)/ 4, 17 amps (at 24V DC)

Bidder has to submit Authorization Certificate from OEM of Telescopic Light Mast as per Annexure-X without which bid shall be liable for rejection.

ANNEXURE - X

ON THE MANUFACTURER'S LETTER HEAD

MANUFACTURERS AUTHORIZATION FOR (MENTION ITEM NAME)

DATE

To,
(PLEASE MENTION NAME AND ADDRESS OF CUSTOMER)

Ref: Tender No: (PLEASE INSERT BID REFERENCE)

Dear Sir,

We, **(NAME OF THE OEM),** who are the manufacturers of **(NAME OF ITEM),** having our office at **(REGISTERED OFFICE / FACTORY ADDRESS)** do hereby authorize **(NAME OF THE BIDDER)** to submit a bid, against above mentioned tender. The purpose of which is to provide the following equipment **(NAME OF ITEM)** and to subsequently negotiate & sign the contract.

We hereby extend our full warranty for the above specified equipment offered by us, supporting the supply, installation & operational acceptance of the said equipment by **(NAME OF THE BIDDER)** against these bidding documents & duly authorize the said bidder to act on our behalf in fulfilling these guarantee & warranty obligations.

No other company other than **(NAME OF THE BIDDER)** unless authorized by a separate letter directly addressed to you mentioning the tender details, are authorized to bid, & conclude the contract for the above goods manufactured by us, against this specific tender.

We also hereby declare that during the contract (including warranty / defects liability), we will make our technical & engineering help available to **(NAME OF THE BIDDER)** to assist them on a reasonable cost & best effort basis, in performance of all their obligations to the purchaser under the contract.

For, (NAME OF THE MANUFACTURER)

SIGNATURE
NAME OF THE PERSON SIGNING THE LETTER
DESIGNATION / AUTHORITY

TECHNICAL PREQUALIFICATION CRITERIA

1. The manufacturer should provide PO Copy for 10 Fire Tenders fabricated with ISO6063 Aluminium Profiles or MS/Stainless-Steel Superstructure, Subframe System for Tank Mountings & Metacone Systems.

2. The manufacturer should provide complete technical details including drawing, design and photographs for the ISO6063 Aluminium Profiles in case if the bidder offers the same.

3. The manufacturer shall provide complete technical details of the subframe design and Metacone. Further the load calculation for selection of Metacone shall also be provided by the manufacturer.

4. The quoted Fire Pump shall be CE certified to EN 1028-1 and 2, its subsequent amendments, EN 1050 and ISO 14121. The CE certificate mentioning the MOC of the pump shall be attached with the tender documents without which the offer will be liable for rejection.

5. A complete set of drawings, like general arrangement drawing, load distribution diagram, drawings of the tank/s (if any), shutter and drawer details (as applicable), wiring diagram, hydraulic circuit, and power transmission through respective PTO/s shall be submitted along with the bid, failing which the bid shall not be considered.

6. Bidder shall have a turnover of at least 10 Cr. in each of last 3 years. Notarized copies of the last 3 years financials shall be submitted along with the bid, failing which the bid will be rejected outright.

7. The manufacturer shall provide a letter of authority (as per attached Annexure — X) from the OEM of below listed Equipment confirming the availability of Warranty and after sales service to Department after the supply of product. The letter should be addressed directly to CUSTOMER only.

    a. Fire pump
    b. GRP Water and Foam Tanks
    c. Auto Eject Function
    d. Self-Contained Breathing Apparatus
    e. Pyrojet Fire Hose
    f. Hand Operated Combitool
    g. Battery Driven Positive Pressure Ventilator
    h. Hand Held Nozzle
    i. Portable Thermal Imaging Camera
    j. Hand Breaking Tool
    k. Telescopic Light mast

8. Bidders should mention make & model of all offered equipment and enclose detailed technical specifications / literature / brochures (in English) which shall be annexed with proper references. Bids submitted without supporting documentation will be rejected outright.

9. Compliance to technical specifications is the essence of the contract. A clause by clause compliance shall be provided. Any deviation to the tender requirements shall be treated as technically non-compliant & the offer shall not be considered any further.

10. The bidder should have executed a single order worth at least Rs. 5 crores from any reputed Govt. Departments, PSU's or reputed private sector companies. Documentary evidence along with the bid failing which, the bid shall be rejected.

11. The Bidder must have to submit Solvency Certificate worth **20 % of** Total Tender Value. (Solvency Certificate should not be older than last 6 Months)

ANNEXURE - B

ON THE MANUFACTURER'S LETTER HEAD
MANUFACTURERS AUTHORIZATION FOR (MENTION ITEM NAME)

DATE

To,
The Municipal Commissioner,
BHAVNAGAR Municipal Corporation
BHAVNAGAR

Ref: Tender No: (PLEASE INSERT BID REFERENCE)

Dear Sir,

We, **(NAME OF THE OEM),** who are the manufacturers of **(NAME OF ITEM),** having our office at **(REGISTERED OFFICE / FACTORY ADDRESS)** do hereby authorize **(NAME OF THE BIDDER)** to submit a bid, against above mentioned tender. The purpose of which is to provide the following equipment **(NAME OF ITEM)** and to subsequently negotiate & sign the contract.

We hereby extend our full warranty for the above specified equipment offered by us, supporting the supply, installation & operational acceptance of the said equipment by **(NAME OF THE BIDDER)** against these bidding documents & duly authorize the said bidder to act on our behalf in fulfilling these guarantee & warranty obligations.

No other company other than **(NAME OF THE BIDDER)** unless authorized by a separate letter directly addressed to you mentioning the tender details, are authorized to bid, & conclude the contract for the above goods manufactured by us, against this specific tender.

We also hereby declare that during the contract (including warranty / defects liability), we will make our technical & engineering help available to **(NAME OF THE BIDDER)** to assist them on a reasonable cost & best effort basis, in performance of all their obligations to the purchaser under the contract.

For, (NAME OF THE MANUFACTURER)

SIGNATURE
NAME OF THE PERSON SIGNING THE LETTER
DESIGNATION / AUTHORITY

IT IS MANDATORY TO SUBMIT

An earnest money deposit of INR.4,50,000/- in form of demand draft/ F.D.R. and tender fee of Rs. 15,000 (Non Refundable) in form of demand drafting favour of Municipal Commissioner, Bhavnagar Municipal Corporation, Bhavnagar, of any (except SBI) nationalized or schedule bank and Govt. of Gujarat approved bank shall accompany along with qualification's documents from 30/01/2025 to 28/02/2025 till 18:00 hours at Office of the CHIEF FIRE OFFICER, FIRE & EMERGENCY SERVICES, NIRMANAGAR-BHAVNAGAR-364001 by SpeedPost/Reg.Ad.

Sign of e-tenderer

1. DETAILS OF TENDERER DATA SHEET

1.	Name of Tenderer	
2.	Address of the office(s) and factory	
3.	Name of individual(s) who will serve as the point of contact/communication for BMC with the tenderer	
4.	Designation	
5.	Telephone Number	
6.	E-mail address	
7.	Fax number	
8.	Mobile number	
9.	Name of bank	
10.	Name of branch	
11.	Type of account	
12.	Account number	
13.	PAN number	
14.	G.S.T. number	

Sign of E-Tenderer

FINANCIAL QUOTATION FOR THE "FOAM FIRE TENDER " FOR B.M.C

Compulsory in Online Format only & Strictly Not Be Submitted Offline/Physically Or else Bider will be Disqualified.

Date:
The Municipal Commissioner
BHAVNAGAR Municipal Corporation,
BHAVNAGAR.

Sub: Financial quote for "**FOAM FIRE TENDER "**

Dear sir/madam,

We, hereby, having reviewed and fully understood all the terms and conditions of this procurement document, submit our financial quote for the supply of following equipment for your evaluation. The price quoted includes packing, forwarding charges, comprehensive insurance and R.T.O. passing all taxes and duties etc. delivery will be made at B.M.C Gujarat at site specified by B.M.C and will be as per tender terms of technical specification of FOAM FIRE TENDER of the procurement document.

Supply of FOAM FIRE TENDER

Sr. No.	Details	Financial quote per unit(Rs.)	Quantity	Total amount (Rs.)
A	**Supply of FOAM FIRE TENDER as per technical specification (**Quoted price should be inclusive of all taxes and duties, G.S.T., To and For, Transportation charges, Comprehensive Insurance, Entry taxes, other applicable levies, RTO passing charges, F.O.R. at BHAVNAGAR Municipal Corporation, BHAVNAGAR-364001)		01 nos.	
	TOTAL			