BULDHANAMUNICIPAL COUNCIL
BULDHANA, MAHARASHTRA.

MCB/FIRE/ 1874 /26 Date ~~/04/2026~~ 06/05/2026

E -Tender Notice No :02 **for F.Y. 2026-27**

Tender

Invites e - Tenders for
"Fabrication and Supply of Water Bowser Tender on TATA/ASHOK Leyland/Equivalent on 28 Ton Chassis(Qty 01 No)"

Sr. No.	Description	Details
1.	Name of Work	**"Fabrication and Supply Water Bowser Tender on TATA/ASHOK Leyland/Equivalent on 28 TonChassis(Qty 01 No)"**
2.	Tender Notice No	As Above
3.	Submission of Tender Documents in all Respect:	From 07/05/26 up to 21/05/26 at 5:00 PM.
4.	Tender Form Fee	Cost of Blank Tender Documents of Rs5,000/- (Non Refundable) shall be paid via online e- Payment gateway mode only
5.	Earnest Money Deposit (EMD)	Cost of EMD of Rs 1,77,000/- shall be paid via online e- Payment gateway/DD modeonly

Tender document are available for download on the website **http://mahatenders.gov.in** from 07/05/26 Tenders shall pay cost of blank tender form, Earnest money deposit and service charges through payment gateway available on the website. Please note that cost of blank tender form, Earnest money deposit will not be accepted any other form like cash or DD or BG. Authority reserve the right to accept or reject tender without assigning any reason.

Fire and Emergency Service SEAL M.C.Buldhana

Chief Officer
Municipal Council,Buldhana

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1. GENERAL INSTRUCTIONS TO THE BIDDING AGENCIES

Fees and Deposits:-

a) **Cost of Blank Tender & Earnest Money Deposit**-Cost of Blank Tender Document of Rs.5,000 /-(non-refundable) & Earnest Money Deposit of Rs. 1,77,000/- shall be paid via online Payment Gateway/DD mode only. The information of E-Payment Gateway is available on E-Tendering Website.

b) **Security Deposit** - The successful bidder shall provide security Deposit of 10% (Ten percent) of the contract value for the contract period of 12 Months. Security Deposit should be in the form of Bank Guarantee, secured from the nationalized bank at the time of execution of contract agreement

c) **BidValidity** -The bid must remain valid for 280 days after the last date of submission of bid/offer.

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2. Eligibility / Qualification Criteria

1.	The bidder shall submit EMD & Tender Fee online generated receipt copy in Technical bid (Envelop-A).
2.	The bidder shall submit duly Signed & sealed tender documents including tender terms attach scanned copies in technical bid (Envelop-A)
3.	The tenderer / Manufacturer should, have experienced/ supplied at 50 no's of fire fighting vehicles to the Indian Government/ Semi-Government/ PSU organizations along with the Work Order copies without which the bid will be rejected.
4.	The Tenderer /Manufacturer should have experienced/Supplied at least 5 Work Orders of Similar i.e Water Bowser to any Government /Semi Government, Fire Emergency Services/Port Trust. Work Order Copies of the same should be submitted in Technical Bid.
5.	The Firm must be 15 years old. Work Order Copies of the same should be submitted in Technical Bid.
6.	The bidder shall submit copy of GSTregistration certificate, Pan Card, MSME certificate, Shop Act/Factory License,Trade Certificate, EPF & ESI registration certificate, ISO certificatesshould be submitted in Technical Bid (Envelop- A)
7.	The Manufacturer should have executed at least one order with a minimum work order value at least 5 corers or more.
8.	The Bidder must upload all required OEM Authorization Letter or any certificate as suggested in the Technical Specifications along with the technical bidwithout which the bid will be rejected.
9.	Documentary evidence showing that the tenderer has an average turnover of last 3 years is Rs. 8 corers. Tenderer shall submit audited balance sheet and Turnover certificate issued by CA as a proof of the same.

3. Preparation ofBid

Technical & Financial bid should be submitted separately.

a) Technical Bid

In preparing the Technical Bid, the bidding agencies are expected to study the detailed specifications mentioned in the Tender document in detail. Price should not be given in the Technical bid (i.e. Envelope 1) Technical Bid shall also include financial capacity of thebidder.

The required documents to be submit as a proof of technical capacity. Tenderer are requested to please note that they should ensure that the following documents and instructions there on should be followed scrupulously

A		**Minimum Validity period** of 280 days should be Stipulated in the Tender document
B		Hedging condition/ **own conditions** should not be stipulated
C		Scan & upload filled in & signed the tender form and the bills of quantities.
D		Quote **unit price of items in Financial Bid- (Schedule –B) tender** in figures and in numbers. (only through online)
E		The Execution of work should be carried out only by the tenderer himself.
F		Scan & upload **documents as specified below for inclusion in (Envelop-A)**
G	i)	"PAN CARD" of Proprietor in case of Proprietor/Ownership firm
	ii)	"PAN CARD" of a Company or Partnership if any
	iii)	Audited Balance sheet and Turnover of last 3 years issued by CA
	iv)	Certified Copy of receipt for payment for tender cost.
	v)	List of clients along with documentary proof to whom the Vehicles supplied as per the EligibilityCriteria
	vii)	Copy of valid ISO 9001 Certification
H		Scan & upload duly filled in & signed Specifications in the Tenderdocument.
I		Scan & upload the Certificate of Registration of GST issued by Govt. authorities in prescribed form.
J		All other documents submitted as part of the bid are to be certified by the official sign and submit Tender document in full signatures.In case itis found that certain documents/information/clarification is not submitted in full.

B) FinancialBid

In preparing the Financial Bid i.e. Envelop-B, the bidders are expected to take into account all the requirements and conditions of this Tender document.

The Financial Bid shall include all government taxes & duties. However Goods and service Tax (GST) applicable in India

4. Disqualification ofTenderer

- If the Tenderer is not meeting the eligibility / qualifyingcriteria
- Even though the Tenderers meet the above qualifying criteria, they are subject to be disqualified if theyhave:-
- Made misleading or false representations in the forms, statements and attachments scan & uploaded in proof of the qualification requirements; and/or

5. Bid Validity

The bid must remain valid for 280 days after the last date of submission of bid/offer. The original Bid (Technical Bid as well as Financial Bid) shall be prepared and submitted /uploaded in compliance of this Tender in to, as per the standard e-tendering procedure.

6. Bid Evaluation

Prior to the detailed evaluation of Bids, the Buldhana Municipal Council shall determine whethereachBidisfullyresponsivetotherequirements.

To be fully responsive, a Bidder must:

(a) Submit a Bid, complete in all respects, complying with all the requirements of Tender document in to without anydeviation.

(b) Submit a Bid within the prescribed time of submission as mentioned in the Tenderdocuments.

(c) Provide with all the documents and information in the Technical Bid as given of these Tender documents duly filledin.

7. Opening and Evaluation of FinancialBid

After the evaluation of the Technical bid, the Buldhana Municipal Council shall notify those bidders whose technical bid are found responsive and acceptable regarding opening of their financial bid on a specified date and time. The Buldhana Municipal Council reserves the right to open the bid on the same date as already announced or in case of any reason, appropriate day to be communicated separately.

8. Stamp Duty

The contractor shall bear the revenue stamp duty on Total Agreement value the agreement as per the Indian Stamp Duty Act-1985 (latest revision) provision applicable during contractperiod.

9. Special Conditions of Contract

SPECIFIC INSTRUCTIONS	
1	The work involves of Fabrication and Supply of Water Bowser Tender on TATA/ASHOK Leyland/Equivalent on 28 Ton Chassis(Qty 01 No) as per the Tender specifications
2	The Fire vehicle shall be designed as per the designed, operational stability and structural strength based on the criteria laid in relevant standards.
3	The Fire vehicle shall be ready to use and all the equipment's and accessories shall be provided.
4	No parts of the Chassis shall be cut or mutilated during the fabrication without permission of CO. The responsibility for the safe custody of Chassis during the fabrication and till it is delivered to Nagar Panchayat after satisfactory test lies with successful tenderer.
5	The Fire vehicle shall be capable of being operated under all conditions continuously with no drop of efficiency or any ill effects on its component.
6	The tenderer shall offer the equipment's / components of the makes stated in the specifications. If any deviation is made, the tender is likely to berejected.
7	The tenderer cannot appoint a sub-contractor for carrying out the work. The work will have to be carried out by the tenderer or their principals.
8	The Fire vehicle with all the equipment's provided **guaranteed for a period of 12 calendar months** from the date of supply of vehicle.
9	It will be the responsibility of the tenderer to deliver the vehicles to BuldhanaMunicipal Council after the completion, inspection and performance test. The charges applicable for the same if any shall be included in the tender.
10	The Insurance & RTO registration of vehicle made by Contractor.
11	The telephone No. and names of the responsible persons shall be clearly stated in the tender. The tenderer shall have proper communication system at their offices and residences of the concerned personnel so that inemergency difficulty, they can be contacted.
12	In case of any dispute, the decision of Buldhana Municipal Council shall befinal.
13	The Tender copy shall be submitted along with the tender submit duly signed on each page as a token of acceptance of the terms and conditions.
14	As per prevailing rules, TDS will be deducted at source towards Income Tax from all the bills submitted to the department.

10. Workmanship and Material

Workmanship executed shall be of the highest order. All rivets and bolt holes shall have a coat of approve paint on both surfaces before riveting or bolting or welding. All steel screws, bolts, nuts, rivets etc. shall be zin coated or shall have rust proof coats by recognized process. The roof joints shall be subjected to rigid water tes at the tenderer's working in the presence of the Chief Officer, Buldhana Municipal Council All the directions an instructions on all points related to the fabrication shall be executed whenever given by the Chief Officer fo quality workmanship with quality. All the material to be used in the fabrication of the body work shall be o reputed make and good quality or approved make and type. All equipment and material shall comply with th requirements of the latest relevant standards. The structure of vehicle shall be rattling free and noiseless whil inmotion.

Stage wise Inspection

Advance notice of at least 1 week should be given by the fabricator; however the fabricator must keep th vehicle ready for stage wise inspection before giving such notice. Purchaser reserves the right for carrying th immediate inspection after receiving such notice forinspection.

The stages of inspection will be as under:-

Bare Chassis Inspection will be carried out at the Manufacturer/Dealer site by the Chief Officer or Authorize Person of Buldhana Municipal Council and the clearance to the effect shall be sought by the Tenderer.

Ist Stage Inspection	a) Body Structure Inspection b) Water Tank & Hydro Testing
IInd Stage Inspection	a) External Paneling b) Installation of Pump, PTO & Piping c) Inspection of Paneling work
IIIrd Stage Inspection	a) Performance of Fire Pump & PTO b) Shower Test c) Road Test d) Complete Test of Water Tender

Each stage wise inspection will be carried out by the Chief Officer or Authorized Person of BuldhanaMunicipal Council

Expenses towards lodging boarding of inspecting team members should be borne by the Company. To and from expenses towards the travelling of the team members from the journey place to the workswill be borne by the successful tenderer and the offer shall contain all such expenses.

12. Instruction Books

Instruction books for the guidance of the user including both operation and normal maintenance shall b supplied for all the equipment's in English language. The books shall include an item wise and illustrated spar parts list giving reference numbers of all the possibly swearing parts. The workshop manual and spare part catalogue of Chassis shall also be supplied with vehicle preferably with softcopy.

13. Payment General Terms & Conditions

Successful Bidder should submit the Pro-forma Invoice of Chassis and stage wise payments to the Buldhan Municipal Council The Pro-forma Invoice should be on the name of The Chief Officer, Buldhana Municipa Council The Advance payment will be done against the valid Pro-forma Invoice. The payment will be mad directly to the bidder.

The cost of work carried out by the Company in Schedule 'B' shall be treated as inclusive of all cost of To & From transportation and storage etc., all taxes, duties, and any other incidental charges. The part payment shal be released as under: -

10% security deposit in the form of bank guarantee for a Total period of 12 months.

14. Guarantee / Warrantee

a) The successful tenderer will have to furnish maintenance and repair guarantee, for full unit (Body, Struc Equipment, Accessories) supplied undertaking for service, repairs, replacement, maintenance etc. against a defects in the material used, equipment's provided. For 12 calendar months commencing from the date o acceptance of the appliance. This should also include Servicing, Maintenance which needs to be don periodically as per scheduled.

b) The Guarantee towards the supply of spare parts and service for minimum period of 1 year from the date o supply ofvehicles.

c) The equipment/product should be repaired within 06 days, failing which a replacement should be given til the machine isrepaired.

d) The Company is expected to promptly attend the equipment as above. In order to provide an efficient service the Company must obtain the name, address, phone number & other contact details of the person i possession of theequipment.Hewillberequiredtokeepthislistup-todateatalltimes.

e) The Company will obtain written acknowledgment from the above person after each time the equipment i serviced. Such receipts will have to be produced to get the sign off for successful completion of the warrante period.

f) To avoid hampering of the services the Company shall be responsible to attend any call for manufacturing o defect in the vehicle within 72 hours however; defect should be carried out on Top Priority.

15. On Sight Training

Training schedule and module should be submitted by a contractor for actual operation of the system minimum 2 days on sight training should be given to the actual user of the vehicles.

16. Delivery Period

Free delivery of the Fire vehicle shall be given at BuldhanaMunicipal Council. Delivery Period of the complete vehicle is 240 days. The delivery period will be counted from the transportation of Chassis from authorized dealers to the factory of successful Company and delivery FOR destination to Buldhana Municipal Council.

17. Facility for after Sales Service

The successful agency should have the facility to give after sales service in the state of Maharashtra and shal be responsible to give free service for the period of at least 1 year. This includes spares, labor and material fo body, pump etc. excluding Chassis.

Taxes & Duties

The Offer should be inclusive of all taxes, all applicable taxes, duties; GST etc. should be included in the offe itself. Tax elements included in the offer may be indicated in the covering letter. No extra payment will b paid on any ground; It is a duty of Company to ascertain for all applicable & prevailing taxes.

All the rates quoted by the Company shall be deemed to be including all taxes such as GST and or any othe charges / taxes in force prevailing on the date of opening of tender. The offer should also include To& Fron charges, (Transportation of vehicle from manufacturers workshop to Buldhana Municipal Council) Chassi will be given by Buldhana Municipal Council. However it will be the responsibility of Successful contactor t take the delivery on behalf of BuldhanaMunicipal Council from the Manufacturer or the Dealer or supplier a the case may be and deliver it to his factory premises for fabrication and Final delivery of Fire Tender to th BuldhanaMunicipal Council no extra payment or charges will be paid for this transportation.

19. Delivery

The delivery offered should be guaranteed and clearly indicated. The delivery period shall be counted fron the date on which chassis is received by the successful tenderer. Ex-Stock availability of material/items. I any, should also be indicated separately. Early deliveries may be given preference.

The material should be delivery to the consignees within ordered delivery period from the date of issue o dispatch instructions / clearances. Any delay in delivery beyond this period shall attract penalty.

The vehicle should be delivered after receipt of complete Payment of contract value.

20. Penalty for Delay in Delivery

Penalty for delay in completion of contract agreement will be recovered at the rate of Rs.1000/- per day per.

Fire and Emergency Service SEAL M.C.Buldhana

Chief Officer
Municipal Council,Buldhana

----------MANUFACTURER'S AUTHORIZATION CERTIFICATE

(on manufacturer's letter head)

To,

The Chief Officer,

Buldhana Municipal Council,

Buldhana,Maharashtra.

Sub.:-"Fabrication and Supply of Water Bowser Tender on TATA/ASHOK Leyland/Equivalent on 28 Ton Chassis(Qty 01 No)"

Tender No. ----------dated----------

Dear Sir,

This is certify that, we hereby authorize and confirm that (-------**Company Name**----------) having their registered office at (----------Address----------) and we offer our ---------- as per above subject tender specifications and authorize them to quote our "----------" make ---------- for the above subject.

We also promise to provide all the necessary technical / after sales service and spare parts support for the product supplied through (-------**Company Name**----------) for next one year.

Place:

Date:

Manufacturer Seal & signature

ANNEXURE – A

Equipment Amended to be supplied with the appliance are as follows:

Sr No.	Particular (As per Tender Specification)	Qty.	Amended Changes (As per Annexure B page no. 33 Point no. 2)
1.	Pyro protect RRL Delivery hoses, Type B, (ISI-636) 63mm dia X 15 M with Copper winding Gun metal / SS couplings of 63 mm couplings.	15	10
2.	Pyro protect RRL Delivery hoses, Type B, (ISI-636)38mm dia X 15 M with Copper winding Gun metal / SS couplings of 63 mm couplings.	15	04
3.	Suction hoses 2.5 m length 100 mm dia fitted with Gun metal coupling.	04	04
4.	Suctionstrainertor100mmsuctionhose—brassasperIS: 907: 1984	01	01
5.	Suction wrenches Conventional / Universal for 100mm suction hose couplings as per IS : 4643:1984	02 Pairs	02 pairs
6.	ShortBranchpipeGM63mmmaleinletasperIS:903:1993	02	02
7.	Foam branch — FBSX type, with pick up tube, GM as per IS:2097:1983	02	01
8.	AluminumExtensionladder10.5 mtrs with the provision of gallows (Make – Simplex/ Marshal) (Note - Authorization certificate shall be enclosed with tender documents.)	01	01
9	Suction Adaptor GM 100mm female x 63mm male with lugs	01	01
10	Double male coupling 63mm	02	02
11	First Aid box for 10 persons	01	01
12	Rubber gloves, marked with IS-4770-1968	06	06
13	Basket strainer as per IS-3882-1968	01	01
14	Spade with wooden handle	01	01
15	Pick axe wooden handle marked with IS-273-1973	01	01
16	Crow bar marked with IS-704-1968	01	01
17	Bolt Cutter heavy duty	01	01
18.	Torch	02	02
19.	Sledge Hammer 6.5kg IS – 841	01	01
20.	Fire Extinguisher Co2 Type 2 Kg : (IS 15683-2006)	02	02
21.	Fire Extinguisher ABC Type 4 Kg : (IS 15683	02	02
22	Ceiling Hook	06	04

23	Metal Cutter for search use	01	01
24	B.A Set detailed Specification mentioned below in Additional Accessories	04	01
25	Adaptor 63mm male to 38mm Female GM	02	01
26	Adaptor 63mm female to 63mm female GM	02	01
27	Double Female coupling 63mm	02	01
28	Dividing Breathing with control 63mm instantaneous pattern – GM as per IS : 5132 2002	01	01
29	Collecting Breathing 63mm instantaneous pattern – GM as per IS : 905-1980	01	01
30	Nozzle Spanner	01	01
31	Gumboot (Knee Length)	06	06
32	SELECT-O-MAX selectable flow nozzle having 63mm male inst. inlet with light weight (made of Al. alloy hard anodized) with Pistol Grip handle, Rubb1er Bumper, with a capacity flow adjustable from 150-350-450-550-900LPM LPM@7kg/cm^2 made of AL. ALLOY CASTINGS. (CE MARKED).	02	02
33	Power Operated Chain Saw	01	01

Fire and Emergency Service
SEAL
M.C.Buldhana

Chief Officer
Municipal Council,Buldhana

ANNEXURE : B

Sr No.	Particular (As per Tender Specification)	Amended Changes (As per Annexure B Page No.33)
1.	The complete super structure of the cabin shall be made out of SS 304squaretube of30X30X1.6mm.	The complete super structure of the cabin shall be made out of G.I. square tube of30X30X1.6mm.
2.	The flooring of the driver cum crew cabin shall be fabricated out of SS 304 angles of40x40x4mmthickwhichshallbeproperly welded/boltedtothecrossmembers	The flooring of the driver cum crew cabin shall be fabricated out of MS angles of40x40x4mmthickwhichshallbeproperly welded/boltedtothecrossmembers
3.	The flooring shall be provided over the super structure with 12 gauges Aluminum chequered plates.	The flooring shall be provided over the super structure with 14 gauges Aluminum chequered plates.
4.	WATER TANK Material of Construction - SS 304	WATER TANK Material of Construction as per – MS IS 6062
5.	All pipelines shall be of stainless steel grade and all valves up to 50 mm size shall be 3 piece design grade 304 stainless steel ball valves. All valves above 50mm shall be standard butterfly valves.	All pipelines shall be of G.I. Grade and all valves up to 50 mm size shall be 3 piece design grade G.I. l valves. All valves above 50mm shall be standard butterfly valves.

Additional Accessories should be Supply with Vehicle

A. FEATHER WEIGHT HIGH STRENGTH HAND HELD NOZZLE : 01 NO

Flow rate : Max Flow 470 lpm @ 6 bar

Working pressure : PN 16

Throw : Full jet –30m Spray–4.5m

Inlet : 2

½" BIM Coupling Material : Al Alloy

Dimensions : LxWxH mm (Not more than 347x80x80)Weight : Not more than1.25 kgs

Flow pattern : Hollow straight stream to fog spray with an angle not less than 120 deg Material : Operating head–Rubber and Chrome plated brass Barrel–EIR Plastic Coupling material–Pyrolite®

Approval : SOLAS / MED approved

Approved Makes : **AWG/AKRON / TFT**

Note–Authorization certificate & SOLAS / MED approved Certificate shall been closed with tender documents.

B. B.A SET WITH SPARE CYLINDER WITH FIRE ENGULFMENT TEST :01NO.

SPECIFICATIONFOR BISAPPROVED SELF CONTAINED OPEN CIRCUIT COMPRESSED AIRBREATHING APPARATUSWITH STEELCYLINDER AND MECHANICALPRESSURE GUAGE &WARNINGWHISTLE.

a) GENERALREQUIREMENT:

The self-contained open circuit type compressed air Breathing Apparatus set should be approved toIS10245 Part 2.The SCBA set should be supplied with mechanical pressure gauge & warning whistle. The massofthereadytousesetshallnotexceed15.90kg.

b) BACKPLATE(BODYHARNESS):

The orthopedically designed Back plate should be chemical & heat resistant, lightweight, water resistant, anti-static with rubber shock absorber at the base and mounded carrying handles. The back plate should have LDV holder & should also have an anti-vibration strap to prevent accident all loosening of cylinder from back plate due to vibration. Back plate should be universal type and supplied with Padded shoulder harness.

c) FACEMASK:

The Full Face mask should be approved to IS 14166. Should be manufactured out of EPDM rubber and have suitable double reflex face sealing. The visor should be made of Polycarbonate material. It should have

	suitable 5 finger head harness. The face mask should have a spring loaded exhalation valve and a speech-diaphragm for better communication. The Face mask should have easy & quick fitting to Demand Valve from the front. The neck strap should have a provision to hook the face mask when not infuse. d) PNEUMATICS-PRESSUREREDUCER&LUNGDEMANDVALVE&HOSES The reducer shall be of the 'balanced' type, with provision of safety pressure relief valve and air flow in excess of 1000 lit/min and at 30 bar in excess of 400 lit/ min. The LDV should be quick plug in type, first breath activated at 2-4mbar, connectible from the front side of the mask and capable ofdelivering300lpmofair up to 20Barpressure. e) PRESUREGAUGEANDWARNINGDEVICE Pressure Gauge should be connected to the pressure reducer by a high pressure hose (Non Metallic outer surface). It should have a luminescent dial encased in a rubber cover. Should be integrated with the warning whistle in a streamlined hose without any manifold block. Warning whistle should be a self-actuating of 90Db intensity and should be positioned on the shoulder in front of the user & close to their of the user. f) AIRCYLINDER: The steel air cylinder shall have a minimum water capacity of 6.0 litters and filled at a pressure of300 bar should be PESO approved locally in India. The cylinder shall be supplied with inline type valve made from high tensile brass. The design of the valve shall be such that and shall be located in such a way that it cannot be closed inadvertently during the use. The valve should also be approved to PESO. g) AFTERSALESSERVICE The supplier should have a full fledged after sales service facility in India in accordance to BIS. Should have testing facility for measuring the air flow capacity, breathing resistance and exhalation resistance and for conducting Positive & Negative Pressure Leak tests for mask/lung demand regulator. Also should have PESO, Nagpur approved in-house Cylinder Refilling, Storage & Hydro testing facility. **Make:-INTERSPIROUSA/JOSEPHLESLIEDYNAMICS/NAFCO** Note–Authorization certificate shall been closed with tender document.
C.	**ELECTRICALCABLEWINCH : 01 No** • Electric cable winch of 6.5 ton. Capacity shall be provided. The winch unit shall be complete with minimum 5.5 HP 12/24 volt DC series wound electric reversible motor for increased pulling power, rope drum, and 90 feet.

	• Heavy duty galvanized EIPS wire rope with replaceable self-locking hook and shall be mounted on the front bumper of the vehicle with suitable strong support. • Make: **RUGCEL / LIGHTTEC / ROTZLER** Note: Authorization certificate shall been closed with tender document
D.	**THROWABLE EMERGENCYRESCUEINFLATABLESURVIVALRESCUE STICK : 01 Nos** **General Requirements:** • **Type:** Throw able Inflatable Survival Rescue Stick Cum lifebuoy (portable float) • **Activation:** The Inflatable Survival Rescue Stick Cum lifebuoy must automatically activate and inflate upon contact with water without any manual intervention. • **Inflation Time:** The Inflatable Survival Rescue Stick Cum lifebuoy must fully inflate within **2 seconds** upon contact with water. • **Weight:** The Inflatable Survival Rescue Stick Cum lifebuoy's total weight shall not exceed **500 grams**. • **Size:** The Inflatable Survival Rescue Stick Cum lifebuoy should be compact, portable, and easy to transport with following dimensions Length not more than 28cm and Max. Dia. 7cm. • **Ease of Handling:** The product must be easy to handle and deploy. • **Reusability:** The Inflatable Survival Rescue Stick Cum lifebuoy must be **reusable** after use, ensuring longevity and cost-effectiveness. **Materials & Construction:** • **Inflation Material:** The inflatable should be made from **Thermoplastic Polyurethane (TPU)**, known for durability, flexibility, and resistance to wear and tear. • **Inner Tube:** The inner tube shall be made from highly **resistant, non-slip materials** to ensure stability and safety when used in water. • **Valve:** The Inflatable Survival Rescue Stick Cum lifebuoy must be equipped with an **oral inflation valve** for manual inflation in case of CO2 cylinder failure. • **Capacity:** The Inflatable Survival Rescue Stick Cum lifebuoy shall be capable of supporting up to **100 kg** of weight while in water, ensuring its effectiveness for a broad range of individuals.

	Additional Requirements: A 20mtr rope shall be provided with 3-4mm dia that can be through with the lifebuoy for pulling the person. Consumables Requirement: • CO2 Cylinder: 2 nos • Bobbins: 2 nos • Lifebuoy Cover: 2 nos Brand Requirements: The product shall only be from one of the following manufacturers: RIO/BEASLEY(U.K)/ANETLY Documentation and Compliance: OEM/Authorized Dealer Authority Letter: The bidder must submit an OEM (Original Equipment Manufacturer) or Authorized Dealer Authority Letter.
E.	**HEAVY DUTY (FRP) TELESCOPIC LADDER : 01 NO** Technical Specifications Parameter | Specification Details • Maximum Reach | 5.0 Meters • Material Composition | High-Grade Fiberglass (FRP) • Profile Thickness | 2.5 mm (Heavy-duty H-Section) • Load Capacity | 100 kg (Safe Working Load) • Total Step Count | 12 Steps • Step Interval | 43 cm • Net Weight | 18.8 kg Key Performance Features & Compliance • Dielectric Safety: Built with non-conductive Fiberglass (FRP) side rails, making it an essential requirement for electrical contractors and high-voltage environments to prevent electrical arcing. • Structural Integrity: Features a robust *2.5 mm wall thickness*, providing significantly higher rigidity and reduced "sway" compared to standard commercial ladders. • Portable Efficiency: At 18.8 kg, the unit is optimized for single-person transport and rapid deployment, reducing labour time during field operations. • Weather & Corrosion Resistance: Unlike aluminium or wood, the FRP construction is resistant to chemicals, UV radiation, and corrosion, ensuring a longer lifecycle in outdoor or coastal environments. • Ergonomic Step Design: The 43 cm step spacing is optimized for climbing comfort and stability, reducing operator fatigue during prolonged use. • Safety & Stability

	The ladder is designed with anti-skid rungs and heavy-duty safety feet to ensure a secure grip on various surfaces. Make : BAFEN/VESCO/BEETEL Note : Bidder shall submit Authorization Certificate & EN 131- 1/2/3/6 Certificate shall be enclosed with tender documents.
F.	**10 TON HYDRAULIC PORTABLE RESCUE RAM : 01 NO** • Item Weight 29 Kilograms • Material Alloy Steel • Load Capacity 10 tons • Durable Construction Constructed with carbon steel(main part), #45 steel rod for high strength and non-broken. Contains all heavy duty equipment needed for lifting, pushing pulling, bending, straightening & spreading. • High Capacity Jack Power Type: Hydraulic; Load Capacity: 10 tons; Oil Be Filled: 400g. Cylinder Max Lifting Height: 18". • Compact & Portable The whole hydraulic jack body tool kit is compact and complete for the best working performance. They are easy for storage and carry. • 1.4 m Oil Tube The high quality oil tube is extended Long enough to makes your operation more convenient and high performance can also be achieved. 1 x Hydraulic Jack 1 x Hydraulic Hand Pump 1 x Jack hose 1 x Spreader Ram 1 x Kit of Accessories 1 x Plastic Tool Box • Product Details: Load Capacity: 10 Tons(22046LB); Lift Type: Hydraulic; Height Adjustable Range: 13cm(5.1"); Oil Capacity: 400g; Hose length:2M; • Complete Repair : This product contains 16pcs: pump, hose, 10 ton ram, spreader ram, flat base, wedge head, 90°V-base, serrated saddle, extension tubes etc. • Practical Function: The hydraulic jack kit is safe & reliable to use, better than traditional bulky tools. Meet your needs for lifting, pushing, pulling, bending, straightening & spreading tasks.

	• Heavy Load Capacity : 10 tons ram, hold up to 22046LB car weight. Little tools with power strength. Made of high-strength carbon steel, cast iron, which ensures durability and stability. Elaborate welding craft, smooth surface, well sealing quality. • Make : DANIRY/ PROSPER/GENESIS • Note : Authorization certificate shall be enclosed with tender documents
g	**LED Revolving Search Light: 01 qty**

Led Power	50 W (5w X 10)
Operating Voltage	12 V /24 V DC
Color Temperature	6000 K
Water Proof Rating	IP67
Poerting Options	Through wireless remote control with left right up down function
Body Color / Material	Black / Polycarbonate
Lens Material	PC
Beam Distance	Up to 500 m approx.
Beam Angle	39"(Approx.)
Life Time in hours	50,000 hours(approx.)
Rotation	Horizontal 360⁰, Vertical – 90⁰
Base	Heavy Magnet base for stability
Weight	3.93KGS(Approx.)
Dimensions	26 * 20.5 * 18cm
Handle	Adjustable, Provided on the top.
Make	PHILIPS/VEDANTA/LUMOUS
Note : Authorization certificate shall be enclosed with tender documents	

Fire and Emergency Service SEAL M.C.Buldhana

Chief Officer
Municipal Council,Buldhana

Directorate of Maharashtra Fire Services
Maharashtra Fire Service Academy, Vidyanagari,
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SPECIFICATION FOR DESIGNING CONSTRUCTION, FABRICATION, ERECTION, TESTING AND COMMISSIONING OF FIRE WATER / FOAM TENDER (updated as on 28.03.2022)

The Directorate of Maharashtra Fire Service receives specification for various fire tenders and special appliances from different Urban Local Bodies. Mostly, these specs have different compositions such as capacity of Water Tank, Gross Vehicle Weight, Accessories and Various Ancillary Equipment and thus in order to bring the uniformity for all these specifications across Maharashtra, following specification is designed and suggested by Directorate of Maharashtra Fire Services. The aforesaid specification is for "Fire Water / Foam Tender". Details of specification are as follows.

The said fire water / foam tender is the basic requirement for any fire service. As per Standing Fire Advisory Committee (SFAC), Government of India, one fire tender is required for every 50 thousand population or part thereof up to 3 Lac Population and thereafter 1 fire tender for every 1 lac population. (The word fire tender / water tender / fire tanker / water cum foam tender should be read as one only).
Thus, every Urban Local Bodies should have minimum one fire tender in their fire services.

This specification is for fabrication and supply of fire tender having different water capacities to be built on chassis having different Gross Vehicle Weight (GVW). Thus, keeping most of the specification common, the difference required in gross vehicle weight, water, foam tank capacity and the pumping requirement, given below specs are recommended.

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The successful tenderer will be solely responsible for the safe custody and proper maintonanco of the chassis or any part thereof till the fabrication is completed and the vehicle is handed over to the ULB i.e. Municipal Corporation or Municipal Council with satisfactory test. The successful tenderer will have to complete the work as per specifications stipulated below and complete the vehicle in all respect to put into operation and ready to use.

Note:

1. Wherever makes of any equipment is given it shall always be read in continuation word "or equivalent"
2. Wherever the numerical is used indicating dimensions of any equipment or material, tolerance of +/- 10% shall be accepted.
3. IS 6067:1983; IS 950:2012; or latest revision to be followed.
4. Wherever the items / equipment is mentioned having NFPA or EN requirement, for all those equipment, proper certificate regarding the same shall be supplied by the OEM / Fabricator.

2.0 CHASSIS

2.1 Suitable Chassis of Bharat Benz / Mahindra / Tata / Ashoka Leyland or equivalent make having minimum GVW, HP, Wheel base etc., with power steering, Non AC and meeting BS VI standard shall be provided.

2.2 In case the chassis is of the cowl type, the complete cabin shall be manufactured by the body fabricator as per the following specifications :-

2.3 The front end structure, cowl shall be original and shall be retained as supplied with the chassis.

2.4 The size of driver-cum-crew cabin shall be :

Length of cabin	- 2200 - 2400 mm.
Width of cabin	- 2200 - 2480 mm..
Internal height	- Not more than 1700 mm.

2.5 The driver cum crew cabin shall be fabricated in continuation and in line. The under frame cross members shall be fabricated and made out of rolled ISMC M.S. channel of 70 x 40 x 5 mm for less than GVW 12 ton and the size of the ISMC M.S. channel shall be of 100 x 50 x 5 mm for chassis 12 ton and above GVW.

2.6 Quick removable type wire mesh guard made from 25 mm × 25 mm size mild steel galvanised wire mesh of 1.6 mm covered in mild steel angle frame shall be provided to all the glasses of driver-*cum*-crew cabin.

2.7 Each cross member shall be secured to the runner running full length of the chassis frame with suitable mounting plates The runner shall be fixed to the chassis frame

2.8 The complete superstructure of the cabin shall be made out of SS 304 square tube of 30 X 30 X 1.6 mm. The superstructure shall be strengthened specifically on the members where the doors and window frames are to be fitted and also on the other members by providing brackets and the gusset plates securely fitted

2.9 The flooring of the driver cum crew cabin shall be fabricated out of SS 304 angles of 40 x 40 x 4mm thick which shall be properly welded/ bolted to the cross members

2.10 The complete Internal and external paneling of driver-cum-crew cabin, including doors shall be of 1.6 mm aluminum sheet with all the joints riveted and bided.

2.11 The flooring of the driver-cum-crew cabin shall be fabricated from 3 mm aluminum chequered plates except over the mudguard arches which shall be of 2 mm aluminium chequered plate rigidly fixed to the under frame by means of nuts and bolts or riveting. Trap doors for topping up wherever necessary shall be provided.

2.12 The driver-cum-crew cabin shall be equipped with full four doors, one for driver, one for officer in the front and two at the rear for the crew members

2.13 All the doors shall be fitted on the super structural members each hung upon the two/three numbers coach type hinges and handles.

2.14 For all the above windows, 5 mm. thick laminated safety glasses shall be provided

2.15 The wind screen shall be 5 mm thick laminated safety glass curved type single piece with EPDM rubber beading.

2.16 However, if the chassis is of the cabin type, suitable extension of the original cabin shall be done to accommodate the crew members as specified below. Due care shall be taken to ensure that the cabin extension is done completely as per the chassis manufacturers recommendations and suitably strengthened to take the additional loads where required.

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3.0 The Specific Specification for Various Vehicle:

Sr. No.	Chassis GVW	Horse Power	Wheel Base (min)	Water tank Cap Ltrs	Foam tank cap Ltrs	Hose Reel Hose	Pump Discharge Ltr/ Bar	Water / Foam Monitor
	7.0 Ton	Minimum 98 HP	3300 mm	2000 ltrs	----	Hose Reel shall be fitted with 60 meter length and of 19-20 mm ID high pressure hose having bursting pressure shall not be less than 100 bar	a) Normal minimum pressure output- 1800 LPM @ 7 bar b) High pressure output-250 LPM at 20 bar	
	11.0 Ton		3600 mm	3000 ltrs	100 ltrs	Hose Reel shall be fitted with 60-meter length and of 19-20 mm ID high pressure hose having bursting pressure shall not be less than 100 bar	Fire Pump of High Low Pressure type having discharge capacity of 2000 LPM @ 7 bar & 300 LPM @ 35 bar pressure	**Discharge --- lpm at 1800 @ 7 Bar with effective height of 40 for water and 35 Mtr for foam**
	14.0 Ton	130 HP	3800 mm	3000 ltrs	200 ltrs -	Hose Reel shall be fitted with 60-meter length and of 19-20 mm ID high pressure hose having bursting pressure shall not be less than 100 bar	**2000 LPM @ 8.5 Kg/cm^2 at normal pressure and High pressure of 350 LPM @ 40 Kg/cm^2.**	**Discharge --- lpm at 1800 @ 7 Bar with effective height of 40 for water and 35 Mtr for foam**
	16.0 ton	170 HP	4500	4500 ltrs	350 ltrs	Hose Reel shall be fitted with 60-meter length and of 19-20 mm ID high pressure hose having bursting pressure shall not be less than 100 bar	Normal pressure output- 2000 LPM @ 8.5 bar b) High pressure output-400 LPM at 40 bar	**Discharge --- lpm at 1800 @ 8.5 Bar with effective height of 70 mtr for water and 65 Mtr for foam**

	18.0 Ton	175 HP	4500	5000 ltrs	500 ltrs	Hose Reel shall be fitted with 60-meter length and of 19-20 mm ID high pressure hose having bursting pressure shall not be less than 100 bar.	a. Normal pressure output- 2000 LPM @ 10bar b) High pressure output-400 LPM at 40 bar	**Discharge --- lpm at 1800 @ 7 Bar with effective height of 40 mtr for water and 35 Mtr for foam**
	19.0 ton 4x2 chassis	180 HP	4750 mm	6000 ltr	500 ltrs	Hose Reel shall be fitted with 60-meter length and of 20 mm ID high pressure hose having bursting pressure shall not be less than 100 bar.	a. Normal pressure output- 2000 LPM @ 10 bar b) High pressure output-400 LPM at 40 bar	**Discharge --- lpm at 1800 @ 7 Bar with effective height of 40 mtr for water and 35 Mtr for foam**
	28 ton	180 HP		12000 ltr to 14000 Ltrs	--	Hose Reel shall be fitted with 60-meter length and of 20 mm ID high pressure hose having bursting pressure shall not be less than 100 bar.	. Normal pressure output- 3000 LPM @ 10 bar b) High pressure output-400 LPM at 40 bar	**Discharge --- lpm at 2500 @ 7 Bar with effective height of 40 mtr for water and 35 Mtr for foam**

4.0 BODY WORKS AND LOCKERS:

4.1 SEATS

4.1.1 Both the seats (driver and officer in charge) shall be independent and fully adjustable for horizontal as well as vertical adjustments. The officer in charge and crew shall have individual seating, with each seat fitted with brackets for placement of Breathing Apparatus in an upright position. The seats shall be able to accommodate all types of SCBA sets. The seats shall have integrated seat belts. The safety belt (seat belt) shall comply to **AIS 005 / Latest.**

4.2.0

4.1.2 The crew seat shall meet the requirements of AIS standards. Suitable locker space shall be provided below the crew seat

4.2 REAR BODY

4.2.1 The rear body shall be fabricated incontinuation and in line of the crew cabin. The under frame cross members shall be fabricated and made out of rolled ISMC M.S. channel of 70 x 40 x 5 mm for less than GVW 12 ton and the size of the ISMC M.S. channel shall be of 100 x 50 x 5 mm for chassis 12 ton and above GVW.

4.2.2 The mild steel runner of 100 mm × 50 mm × 5 mm size shall be provided over the chassis member for the uniform distribution of load over the chassis. Each cross members shall be secured to the chassis frame

4.2.3 The complete superstructure shall be made out of SS 304 square tube of 30 X 30 X 1.6 mm. The superstructure shall be strengthened specifically on the members where the doors and lockers are to be fitted and also on the other members by providing brackets and the gusset plates securely fitted

4.2.4 The flooring shall be fabricated out of SS 304 angles of 40 x 40 x 4mm thick which shall be properly welded / bolted to the cross members.

4.2.5 The complete internal and external panelling including doors (if any) shall be of 1.6 mm aluminum sheet with all the joints riveted and bided.

4.2.6 The flooring shall be fabricated from 3 mm aluminum chequered plates except over the mudguard arches which shall be of 2 mm aluminium chequered plate rigidly fixed to the under frame by means of nuts and bolts or riveting. Trap doors for topping up wherever necessary shall be provided.

4.2.7 The entire rear deck of the vehicle and locker floor shall be covered with minimum 3 mm thick aluminium chequered plates. All the lockers sides and complete rear of the vehicle shall be covered with minimum 2 mm thick aluminium sheets / chequered plates

4.2.8 Two numbers of 25 mm diameter aluminum pipe railing with sufficient number of aluminum double socket brackets shall be provided to the rear body over the deck. All the super structural members and under frame cross members shall be painted with three coats of rust preventive paint i.e. Red Oxide primer, after 'Deep Phosphating'.

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4.2.9 All the super structural members and under frame cross members shall be painted with two coats of epoxy coat paint.

4.2.10 All the under frame cross members shall be painted with two coats of chassis black paint.

4.2.11 The doors shall open outward side, and shall be hung forward and shall have locks with double catch striking plates. Non-slip steps and rail handles shall be provided to assist the driver to get in and out. All windows glasses shall be splinter proof. Safety belts shall be provided for each seat.

4.2.12 No part of the body works shall reduce the ground clearance to less than 36 cm or increase the overall width of the vehicle to more than 2.50 mtrs. The highest part of the Water Tender with the extension ladder and the monitor mounted on it shall not exceed 3.60 mtrs.

4.2.13 The complete external paneling of driver-cum-crew cabin including doors shall be of 16 SWG Aluminium sheet with all the joints riveted and bided except the roof top paneling, which shall be of 2 mm thick aluminium sheet. The domes and the corners shall be as small as possible and shall be of 16 SWG Aluminium sheet with all joints riveted to the super structural members. The roof top plates shall be overlapped by 70 mm and riveted in a double row with solid rivets.

4.2.14 The complete internal paneling of driver-cum-crew cabin shall be of 18 SWG P.V.C. coated aluminium sheet properly riveted and bided to the super structural members. (The colour of P.V.C. coated sheet will be decided at the time of fabrication).

4.2.15 The complete flooring of the driver-cum-crew cabin shall be fabricated from 3.15 mm aluminium chequered plates rigidly fixed to the under frame cross members by means of nuts and bolts or riveting. Trap doors for topping up wherever necessary shall be provided.

4.2.16 Water proofing treatment shall be given to driver's cabin to avoid water leakage inside the driver's cabin.

4.2.17 The flooring shall be provided over the super structure with 12 gauges Aluminium chequered plates. Drain holes of suitable size shall be provided.

4.2.18 Each cross member shall be secured to the chassis framed by 'U' clamps with aluminium packing block and self locking nut.

4.2.19 Ballato packing of 12mm thickness shall be provided in between the chassis and cross members.

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4.2.20 Suitable gallows shall be provided to carry 7.5 m ladder for vehicle of less than 12 ton and 10.5 m for vehicle more than 12 ton Truss type extension ladder. And designed to facilitate easy and quick removal of the ladder from the rear portion of the appliance. 35 feet Trust type Aluminium ladder shall be mounted on gallows.

4.2.21 The design shall be such that the ladder can be released without difficulty from a reasonably accessible position and shall embody rollers to permit easy withdrawal by one man. Means shall also be provided for locking the ladder when stowed.

4.2.22 Drag hooks/eyes shall be fitted on each chassis member at front and rear and one towing hitch shall be provided at the rear portion for towing one ton trailer / vehicle.

5.0 LOCKERS:

5.1 All lockers provided above the chassis frame shall be covered with aluminium roller shutters – The roller shutters shall be made from double layer aluminium extruded profiles with suitable side guide channels.

5.2 All aluminium profiles use shall be proper anodized with the thickness of each profile not more than 30mm

5.3 The opening roller shutters shall be done means of the bar type handle provide.

5.4 This shall be self-locking type so that while vehicle is moving, the shutters do not open accidently during movement of vehicle.

5.5 Roller shutter profile/panel links shall be inter connected with rubber/plastic/PVC sealing to make the roller shutter watertight when close

5.6 The roller shutter winding rolls shall be between 45mm to 60mm in diameter

5.7 Suitable lockers with doors shall be provided below the chassis frame depending upon the availability of space on the chassis / requirement of the fire services. All lockers shall be provided with ALL OVER LED LIGHTS

5.8 **Provision for Stowage of Equipments**: For all water fittings like branch pipes, etc, quick release type couplings are provided which enables the operator to locate the desired equipment instantly and thereby save valuable time at the time of fire. These couplings also ensure that none of the item damage the internal panelling and thereby increase the life of vehicle. Suitable clamps, brackets, holders, etc, are provided for all other items. The lockers shall be so made that the load distributed shall be equal to both sides.

5.9 Suitable storage space shall be provided to store min. four 2.5 m lengths of suction hoses of same size as that of the pump suction inlet at convenient location.

5.10 Lockers and other suitable accommodation shall be provided for all equipments required for Fire water Tender. Lockers shall be accessible from the ground level to a man of average height i.e. at 5'.6". All lockers shall be fitted with internal light with ON/OFF switch operated automatically, while opening and closing of the doors/shutter type. Extra master switch isolating the electric supply for lockers lighting shall be provided in drivers cabin.

5.11 The pump at Rear side should be covered with shutters.

5.12 The size and placement of lockers shall be clearly shown in the drawing. There shall be three full width lockers out of which 2 lockers shall be provided just behind the crew cabin and one locker shall be provided behind the water tank. There shall be lockers provided at the skirt level of suitable size on both the sides.

5.13 One of the lockers shall be provided with sliding trays for keeping hydraulic rescue tools along with proper fastening arrangement.

5.14 The lockers shall be divided into compartments and halves as per the requirement. The final design will be decided at the time of fabrication work.

5.15 All lockers shall be provided with Alluminium shutters including the pump compartment but excluding the lockers provided below the chassis level. The Alluminium shutters shall be water tight with suitable rubber packing.

5.16 The flooring of the lockers shall be fabricated from MS angles of 40 x 40 x 4mm thick

6.0 WATER TANK

6.1 A water tank shall be installed on the Fire Tender. The tanks have the following parameters:

PARTICULARS	REQUIREMENT
Capacity	**As mentioned in Clause 03**
Material of Construction	**SS 304**
Bottom Plate Thickness	4 mm for water tank capacity up to 7000 ltrs and 5mm for above 7000 ltrs capacity.
Side Plate Thickness (Die Pressed Stiffened on Two Sides)	3.15 mm for water tank capacity up to 7000 ltrs and 4 mm for above

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	7000 ltrs capacity
Top Plate Thickness	3.15 mm for water tank capacity up to 7000 ltrs and 4 mm for above 7000 ltrs capacity
Baffles Thickness	3.15 mm for water tank capacity up to 7000 ltrs and 4 mm for above 7000 ltrs capacity
Number of compartments	Minimum 02 nos. for water tank capacity up to 7000 ltrs and minimum 03 nos. for above 7000 ltrs capacity Suitable to maximum of1Mt^3.
Numbers and Size of Manhole	2 x 450 mm
Numbers and Size of Cleaning Hole (Bottom of Tank)	1 x 250 mm
Drain Pipe on Cleaning Hole	50 mm
Overflow Pipe Size	Suitable
Number of Tank Filling Connections	4 x 63 mm
Tank to Pump Line Size	Suitable to pump.

7.0 Design & Plumbing

7.1 The Water Tank shall be designed to carry approx. 2 % excess capacity of the designed capacity. The Water tank shall be so installed as to allow the full flow of water to the pump. The tank will have baffle plates in order to avoid surge when the vehicle is braking, accelerating and cornering.

7.2 The tank shall have a bolted manhole of 450 mm diameter of the same material as that of the tank and shall have a gun metal threaded ring and cap of 300 mm diameter for filling the water tank from the top. The filler cap shall be clearly marked 'WATER' preferably cast in metal. The manhole cover shall be made from 5 mm thick plate.

7.3 Suitable eyes will be provided on the shell of the tank to enable it to be lifted off the vehicle for repairs when required. The tank shall be fitted with a suitably sized overflow pipe. 2 X 63 mm instantaneous hydrant connections, incorporating a ball valve and strainer, shall be provided for filling the tank through 75 mm bore pipe work. Suitable size pipe line shall be taken from the tank to the suction inlet of the pump incorporating quick action spherical type valve as per IS 13095.

7.4 The open end of the overflow pipe shall be taken down to a point well below the chassis without affecting the effective ground clearance when fully loaded and shall discharge away from the wheels.

7.5 A cleaning hole shall be provided at the bottom of the tank. It will be fitted with a drain pipe & valve which will be taken down to a point well below the chassis without reducing the effective ground clearance.

7.6 The tank shall be connected to the pump and hose reel in such a manner that pressurization of water tank or water tank-pump connection is not possible when pumping water from an outside source of supply.

7.7 Pipelines and Valves

a. All pipelines shall be of stainless steel grade SS 304 and all valves up to 50 mm size shall be 3 piece design grade 304 stainless steel ball valves . All valves above 50 mm shall be standard butterfly valves.

b. The piping shall be flanged for ease of maintenance. **Flanges shall have 'O' ring sealing.** However, flange joints shall be kept to minimum

c. All lines shall be hydraulically tested at 1.5 times of the design pressure and pressure shall be held for 2 h. In no case the lines shall be tested below 25 kg/cm2

d. All lines less than 50 mm size shall be socket welded to matching rating fittings.

e. All lines above 50 mm size shall be butt welded with full penetration welds

8.0 TANK MOUNTING SYSTEM

8.1 The water tanks will be mounted on the vehicle on suitable Rigid mounting with suitable number of mounts clamped with chassis by EN-8 U bolts wherever necessary. 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 full length runner. The Centre of Gravity shall be maintained as low as possible.

9.0 MOUNTING OF SUPERSTRUCTURE:

9.1 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 withthe chassis using the high tensile bolts. Use of "U" bolts as well as direct mounting ofSuperstructure on chassis frame is strictly non-permissible.

9.2 The fire engine shall be so fabricated that Gross Weight of the vehicle shall not be more than as mentioned in Clause 03 above.

10.0 FIRE PUMP (HIGH LOW PRESSURE TYPE)

10.1 As on today there is no BIS standards are available for High-Low pressure Pumps, hence EN-1028 standards are considered for this work.

10.2 A Centrifugal high and low pressure fire pump made up of gun metal / stainless steel of Godiva OR Rosenbauer or Firefly make or any equivalent but complying to EN 1028-1, CE Certified and confirming to following features shall be mounted on the appliance

10.3 The pump should be Certified with EN -1028 Pump has to be tested & Certified by the International accredited organizations like TCE (Tata Consulting Engineering)/ EIL (Engineers India Ltd.) /TUV/ SGS/ UL.

10.4 Pump manufacturer or the fire engine fabricator should have such testing facility as per EN –1028 at their own premises. It's the responsibility of manufacturer / fabricator to ensure for such test facility available with pump manufacturers.

10.5 The pump should be certified with EN- 1028, Pump of normal & high-pressure centrifugal type capable of delivering the requisite capacity at required pressure as mentioned in Clause 03 as mentioned for normal pressure and High pressure. The complete pump assembly shall be made of GM. However fabricator / manufacturer can also quote optional price for Alluminium alloy pump assembly.

10.6 The design of the pump shall be such that the normal pressure & high-pressure stages can be operated simultaneously or independently. The pump housing shall have provision to connect normal pressure hose reel & cooling water line. Simple mechanism shall be provided to change over from normal pressure to high pressure with a single lever operation.

10.7 The low and high pressure sections of the pump may be either multi-stage or single-stage type. Preference will be given for the multistage pump. Anti-friction bearings external to the casing be provided so as to avoid any bearings within the pump casing. The gland shall be of the mechanical carbon / self-adjusting type.

10.8 The impeller(s) of the low pressure section shall be closed type and shall be dynamically balanced. The impeller(s) of the high pressure sections may be closed or regenerative or non-regenerative type. A drain cock plug shall be provided at the bottom of the casing in a way to prevent the cock being opened due to vibrations. Studs, etc, used in the pump casing coming in contact with the water shall be stainless steel. The castings shall be without any blow holes, internal cracks, etc. The interior of the casting shall be smooth finished. The pump casing and impeller shall be subjected to a hydraulic pressure of 21 kgf/cm2 to detect leakage, performance, etc.

10.9 The pump along with the controls shall be placed in a closed locker provided with openable doors or aluminium roller shutter.

10.10 The pump shall be coupled to the prime mover of the chassis through a power take-off capable of transmitting full torque of the engine used for the appliance or a side mounted PTO of suitable torque and ratio.

10.11 All propeller shafts and all fittings used for coupling the PTO, pump, etc., shall be of the suitable size and type required for driveline as used by the chassis manufacturer for the drive line and all shall be dynamically balanced. Any changes in the original driveline of the chassis shall be approved by the chassis manufacturer.

10.12 The PTO shall have a suitable gear ratio to maintain the engine RPM of max. torque and power range as recommended by the chassis manufacturer to achieve the output required from pump.

10.13 A cooling coil made of copper pipe shall be provided in the bottom of the PTO casing in case a split shaft PTO is used for driving the pump.

10.14 A control lever or switch for engaging and disengaging the pump shall be provided in the driver's cab.

10.15 The pump shall be designed to give its rated output with an engine and pump input at shaft speed safe enough to operate the engine. The pump capacity shall be as mentioned in Clause 03.

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10.16 The pump shall be compact and of modular design having one 100 mm suction with round threads with an removable strainer and 2 X 63 mm deliveries with hose pressure relief arrangement shall be fitted with instantaneous delivery coupling. The discharge manifold shall have inbuilt provision for monitor (as applicable) and tank filling piping.

10.17 The entire high pressure section of the pump shall either be made of stainless steel(CF8) or Aluminium Alloy. The pump shall be of front access design such that maintenance of important components like low pressure impeller, high pressure impeller, mechanical seal etc. can be carried out on vehicle without removing the pump and pumps discharge side piping.

10.18 Both the low and high pressure impellers shall be mounted on a single stainless steel shaft. The pumpshaft shall be held in heavy duty ball/roller bearings running in oil bath.

10.19 The pump shall be capable of high & low pressure operations and operation of high pressure shall be controlled by an easily accessible single changeover lever. There shall be two outlets for high pressure of not less than 1.00" size.

10.20 An inbuilt pressure relief valve to control the high pressure within specified limits shall be fitted on pump or pipeline and a suitably sized thermal relief valve shall also be to ensure that the pump water temperature does not exceed 60°C while operatingunder closed discharge conditions.

10.21 Pump casing and impellar shall be of following material:

a. **Pump casing and low pressure impeller**: Lead tin bronze (Grade LTB 2 of IS 318) or High strength light aluminium alloy Gr.4450 of IS:617:1994 (Duly heat treated and hard anodized) or Stainless steel as per IS 6603 (AISI – 304 -18 Cr. 8 Ni).

b. **High pressure impeller:** Lead tin bronze (Grade LTB 2 of IS 318) or High strength light aluminium alloy Gr.4450 of IS:617:1994 (Duly heat treated and hard anodized) or Stainless steel as per IS 6603 (AISI – 304 -18 Cr. 8 Ni)

c. **Impeller neck ring** : Lead tin bronze (Grade LTB 2 of IS 318) or High strength light aluminium alloy Gr.4450 of IS:617:1994 (Duly heat treated and hard anodized) or Stainless steel as per IS 6603 (AISI – 304 -18 Cr. 8 Ni) or POLYMER BASED MATERIAL

d. **Pump shaft:** Stainless steel (Grade 04Cr18Ni10 of IS 6603)

e. **Pump bearing housing –** Cast iron as per IS---- Gr. FG260

f. **Pump panel:** Aluminium sheets (IS 737) or Stainless steel sheet (IS 6911-2017) or FRP/GRP.

10.22 High-Pressure Filter: In case of regenerative impeller, the water going to high-pressure impeller suction shall be filtered before entering in to the high pressure impeller. A filter capable of filtering particle size up to 0.75 mm or less shall be used. This filter shall be of stainless steel and shall be easily accessible for cleaning.

10.23 The pump shall give performance as given in Table 1, when working with strainers (except basket strainer) at 27 ± 5°C

10.24 HOSE REEL HOSE & HIGH PRESSURE GUN

a. Two high pressure hose reel of UDOR / DYNAMIC / ROSENBAUER / Firova / Reeltech / Lighttec India Brand or equivalent make capable of discharging water and foam shall be provided and mounted so as to be accessible for use from either side of the appliance. The hose shall be prevented from kinking.

b. The hose shall be light weight PVC nylon braided hose and the working pressure of hose shall not be less than 40 kg/cm^2. The high pressure hose reels shall hold not less than 50 m of hose in one length, terminating in high pressure fog/jet trigger type gun **AWG / Speciany / FireBug / Firefly make or equivalent make** connected by quick connect couplings.

c. The gun shall be made for Aluminum alloy with rubber grip handle. The inlet connection shall be of ¾" BSP & shall have leak proof rotating type hose connector. The gun shall be constant flow type & shall have discharge

capacity of 150 LPM approx. The Gun shall have facility to set either Jet or Spray pattern reparably in handle grip. The gun shall have ability to work on pressure from 20 Kg/Cm² to 40 Kg/Cm² without affecting the discharge pattern. The weight of the gun assy. shall not be more than 4.0 kgs.. Suitable attachment having aeration facility for foam expansion should be provided for discharging foam when required. The inlet connection shall be of 20 mm and shall have a leak proof rotating type hose connector.

d. The hose reel shall be of electrically rewinding type 12 / 24 V. This shall be additional to manual rewinding. The hose reel side plates and drum shall be made from aluminium or Stainless steel

e The Hose Reel shall be compact in size to accommodate in the lockers of the appliance. Dimension of hose reel shall be as per below:

Length –not more than 850 mm

Width –not more than 450 mm

Height –not more than 470 mm

Weight - not more than 30 kg (except hose pipe)

f. The pump shall be provided with high pressure gun having dual mode for straight penetration and fog conversion. The gun shall be provided with a suitable stainless steel filter. The design of gun shall be such that there is no appreciable re-coil pressure. The second gun shall have an attachment for discharging foam with suitable aeration facility. The Guns should have a Handle, should be provided with facility to adjust the flow rate.

Flow rate:	25 lits/min (+5%)
Weight of extinguisher gun:	2 kgs Max
Working pressure on the nozzle:	100 bars Max. with nominal reaction
Throw:	Jet – not less than 15 mtrs. (+/- 10%)
	Spray: 5mtr (+/- 10%)
Hose Reel Hose:	60 mts Auto (Electric) rewind and also gear winding (manually)
Max. set operating pressure:	100 bars

11 POWER TAKE OFF:

11.1 The vehicle shall be provided with suitable PTO to drive hydraulic pump for hydrostatic drive as well as drive the pump through propeller shaft.

11.2 The PTO shall have suitable ratio so that it should deliver rated power and torque to drive fire pump at rated output and generator simultaneously which is below:

Make - PZB/ VAS / Fire hawk make or equivalent

Type - Split Shaft

Ratio - 1:1.15 or suitable to Pump requirement respect to selected chassis.

Torque - 400 Kgm (main drive) ; 25 Kgm (ancillary drive)

Actuation - Pneumatically from Cabin

11.3 The PTO shall either be gear mounted supplied along with chassis by chassis manufacturer or split shaft of reputed make.

11.4 The PTO actuation shall be pneumatically from driver's cabin with manual override

Note: The PTO details shall be submitted with offer.

12.0 Pump Priming System-

12.1 The pump shall be fitted either with inbuilt twin piston / reciprocating / rotary vane / diaphragm / pneumatic type priming system capable of priming the pump from 7 meters within 50 seconds at NTP conditions.

12.2 The entire priming system shall be constructed either in stainless steel or brass or bronze and shall be actuated by an electromagnetic clutch immersed in oil bath of pumps bearing housing. Arrangement shall be made to actuate the primer in Manual and AUTO modes.

12.3 **When operating in Manual mode** primer should be engaged simply by pressing a single button, only when it is needed.

12.4 **When operating in Auto mode,** primer must be internally actuated and must automatically re –engage when pressure is lost.

12.5 However, in both operating modes the primer shall disengage automatically at a pump discharge pressure of not more than 0.8 bar.

12.6 The primer deactivation shall be controlled directly by a pump pressure sensing device. Priming system driven by any external belts / chain is not acceptable.

13.0 Smart Pump Control Panel (Optional)

13.1 The pump shall be fitted with Pump OEM fitted Control panel comprising following features:

a. Digital Tachometer
b. Digital Pump Hour Meter
c. Digital as well as Analogue Vacuum (Compound gauge)
d. Digital as well as Analogue Low and High Pressure gauges
e. Pump prime button for Auto mode
f. Pump prime button for Manual mode
g. Oil Temperature warning light
h. Electronic Water Tank Level Indicator
i. Emergency Call Bell
j. Audio Visual Alarm for tank indication (Optional)
k. PTO engage lamp in driver's cabin and rear control panel (optional)

13.2 The pump control panel shall be designed keeping in mind the ease of operation and maintenance. The system shall ensure that scheduled operationsand preventive maintenance is easily possible.

13.3 It shall be ergonomically designedto ensure that all controls come to hand easily. The entire area shall be covered by roller shutters.

13.4 All controls of the system will be spaced properly & marked for easy operation. All valves will be of lever-operated type and will be made of SS with Teflon seats. The following controls shall be provided on rear side of the vehicle near the control panel:

a. Compound Gauge
b. Normal Pressure Gauge
c. High Pressure Gauge.
d. Auxiliary Engine Throttle Control
e. Cooling Water Circuit Control
f. Hydrant Connections for filling water tank.
g. Pump Inlets and Outlets
h. Water Tank to Pump
i. Butterfly Valve – Pump to Monitor Valve
j. Operating Instruction Plate

14.0 COOLING SYSTEM:

14.1 Indirect cooling system of open circuit type consisting of a special heat exchanger will be provided on the Chassis to enable full power output to be maintained during the pumping out without overheating and hot water discharged, willbe amply dimensioned for both condition.

15.0 Pump Test —

15.1 The pump shall be run for a period of three hours non-stop delivering the rated output at 7 kg/cm^2 and for one hour at 35 kg/cm^2 with a lift of 3 m at NTP.

15.2 During the test, the water shall not be replenished for the cooling system and the temperature of the engine oil shall not exceed the engine manufacturer rated temperature for continuous working. The engine shall show no sign of stress during the test. The temperature of the cooling water (radiator water) tank shall not exceed the engine manufacturer rated temperature for continuous working.

15.3 The PTO sump oil temperature shall not exceed 100 percent of the manufacturers recommended temperature for the grade of oil used. The pump casing and impeller shall be subjected to hydraulic pressure of 21 kg/cm^2 for 10 minutes to detect leakage, perforation, etc.

15.4 Other Test related to Pump shall also be carried out as given below:

a. **Thermal Relief Valve (TRV) Test:** The TRV shall be tested as follows- After priming the pump from open well let the pressure within the pump build up upto 7 kg/cm^2, this shall be followed by engaging the pump in HP mode. Now, close all the delivery outlets (including the engine cooling valve) then throttle the engine so as to maintain a high pressure of 30-35 kg/cm^2 let the pump heat up until the TRV opens automatically and hot water comes out of it , measure the temperature of this hot water. This temp. shall not exceed the specified value (48° or 80°C). Slowly open the delivery valve so as to allow fresh cold water to enter into the pump. The TRV must close automatically once the ambient temperature is reached by the pump.

b. **Pressure Relief Valve (PRV) Test:** The PRV shall be tested as follows After priming the pump from open well let the pressure within the pump build up up to 7 kg/cm^2, this shall be followed by engaging the pump in HP mode, now close all the delivery outlets (including the engine cooling valve) then throttle the engine so as to increase the high pressure until the PRV opens automatically and the pressure should not be more than 40 kg/cm^2 The PRV must close automatically once pressure is less than 40 kg/cm^2

16.0 FOAM COMPOUND TANK-(SS MAKE)

16.1 The foam compound tank of capacity as mentioned in Clause No. 03 shall be mounted on the chassis in addition to the water tank and as a separate and distinct unit which can be removed for replacement, maintenance etc.

16.2 The foam compound tank shall be of rigid type. The Stainless Steel (SS) Tank should be fabricated out minimum 3 mm thick SS sheets and the bottom thickness of the foam tank should be minimum of 4.5 mm. The foam tank should be hydraulic tested at 2 psi pressure to find out any leakages. Rigid tank shall be of stainless steel sheets should be marked with Steel Authority of India (SAIL). All the welding shall be by MIG welding process only. The welding of the tank shell shall be in such a manner that the first beading is from inside the shell and subsequent bead from outside the shell. The welded surface shall be cleaned of all slugs, scale etc. There shall be minimum joints in the tank shell and hence plates used for fabrication of tank shall be of maximum size.

16.3 The tank shall have a filling orifice of not less than 130 m.m. diameter with a removable strainer fitted to it. The strainer shall be of such material as shall not be affected by constant contact with the foam compound and its total screening area shall be adequate to permit quick filling of compound into the tank. The filler cap shall be clearly marked 'FOAM' preferably pressing, casting or embossing.

16.4 The rigid tank fitted shall have its top dished tunneling arrangement provided to enable easy filling from 20 ltrs. drums. Suitable sharp-edge tin opener may also be provided at the foam tank filling mount for puncturing the foam compound drum for facilitating quick filling of the foam compound directly from the drums into the tank. The tank shall suitably be baffled to prevent surging while the vehicle is in motion/standing on uneven ground or brakes are applied to the moving

appliance. The design of the tank shall incorporate a removable sump fitted with a drain valve. The foam compound draw off tube shall be positioned in the centre of the sump in such a manner that foreign body or sludge shall not pass into the compound line. The draw-off tube shall be fitted with gauge strainer of suitable material, mesh, size, and adequate straining area. The tank shall be removable and it shall be ensured that the joint between the top and the body of the tank is leak proof. The rigid tanks shall be flexibly mounted unless attached to a rigid structure. The tank shall be separate and distinct from the body and shall be easily removable as a unit.

16.5 Means shall be provided for automatic venting of the foam compound tank when the foam is being produced or the tank is being filled. This shall not be incorporated with the cap. The device employed shall be as simple as possible and shall not easily operate during normal use of the appliance.

16.6 The draw-off tube shall be connected to the foam compound proportionator / inductor and pump, as necessary, and an automatic flow control valve shall be incorporated in it so as to maintain a constant induction rate of not more than 6 percent with varying foam out put. The plumbing for this purpose shall have a clear and unobstructed passage of not less than 30 m.m. throughout, without any construction and shall.

(a) Be as short as possible.

(b) Be capable of being easily dismantled for internal cleaning;

(c) Be provided with means of through flushing after use, and

(d) Not form 'U' bend or abrupt angle at any portion and be capable of being drained easily without dismantling.

16.7 A suitable transfer pump shall be provided for transferring foam compound from drums to the foam compound tank without causing any frothing in the tank. Necessary connection shall also be provided for transferring the foam compound through this pump.

16.8 Provision shall also be made for drawing foam compound into the foam producing system from the external source through a pick-up tube while producing foam.

16.9 Automatic proportionating arrangements shall be provided where the induction ratios of foam compound / water solution and flow of water is automatically varied as per demand, merely by opening and closing the monitor / hand-lines. This shall be achieved without any complex system of linkage that may be susceptible to

distortion due to chassis flexion The system shall be reliable and shall not require frequent calibration checks.

17.0 ROUND THE PUMP FOAM PROPORTIONING SYSTEM (RTP)

17.1 This provisions shall be applicable for vehicle having gross vehicle more than 11 ton or having water capacity more than 3500 ltrs, whichever is higher.

17.2 RTP shall be mounted directly on the suction tube and volute of the pump in a compact and self contained manner thereby eliminating any excessive piping / plumbing work to accommodate a foam inductor. The assembly shall be easier to operate and accurate proportions of foam shall be induced in the pump suction.

17.2.1 RTP shall be suitable for all commercially available Natural and Synthetic Foam Compounds. The assembly shall be made up from Gun Metal and shouldhave a stainless steel venture. An infinitely variable control knob to control the induction rate with calibrated markings from 0-180 l/ min. This shall be a purely manual system, which allows the operator full control of the water / foam mix ratio. The system shall be operated satisfactorily at a main pump pressure from 5 to 15 bars. The system should be with minimum no. of moving parts thereby making it highly reliable.

18.0 WATER MONITOR :

18.1 The water monitor shall be mounted on top of the Water Tank in such a manner that it can be manually operated. The monitor shall be capable of projecting water jet / spray and shall be able traversing through 360° in a horizontal plane, elevating from horizontal to 45° and depressing from horizontal to not less than 15° and fully rotating in both directions.

18.2 The projection of Water Jet to an effective distance of not less than as mentioned In Table of Clause 3 to be provided when operated at the designed pressure in a straight jet pattern without dripping.

19.0 FOAM MONITOR:-

19.1 A foam monitor shall be mounted on the roof of water tank in such a manner that it can be manually operated by a member of the crew enabling the vehicle to be capable of operation by one man in an emergency.

19.2 The monitor shall be capable of traversing through 360° in a horizontal plane, elevating from horizontal to 45° and depressing from horizontal to not less than 15° and fully rotating in both directions.

19.3 The monitor shall be fitted with a deflector to enable it to lay a wide carpet of foam for quick coverage of spill fires when necessary. The change from jet to spray shall be instantaneous by the operation of a simple lever.

19.4 The monitor should be capable to throw the foam produced towards a fire at a minimum of 12 mtrs. ahead of the cab when the monitor is at its maximum depression from horizontal.

19.5 The monitor should be of the self-aspirating type with a flow rate of at least 2500 Ltr / min of water at 10 Kgf/cm2. It shall have an expansion ration of not less than 1:6, using foam compound confirming to IS: 4989-1974.

19.6 The monitor shall be capable of projecting the foam discharge to an effective distance of not less than 45 m., in still air when operated at the designed pressure in a straight jet pattern without dripping.

19.7 The foam producing equipment should be capable of being converted later to suit use of equipment with AFFF also, without major modification.

20.0 ELECTRICAL SYSTEM & FITTED ACCESSORIES:

20.1 All important electrical circuits shall have separate fuses suitably indicated and shall be grouped into a common fuse box located in an accessible position in driver's cab and fitted with means for carrying spare fuses.

20.2 The wiring shall be single pole and shall not be exposed to the atmosphere. Conduits shall be used, wherever necessary. The wire selected shall be of suitable size for different circuits considering the current consumption of that circuit with min. 20% higher capacity. All the wires shall necessarily be copper conductor with proper insulation.

20.3 All equipment lockers will have individual lights and these will be operated by means of a master switch on the dash board in the driver cabin.

20.4 A trickle type battery charger having capacity of 250 volts to charge 24 volts battery will be provided for recharging the battery in situ. A red pilot lamp indicating when the batteries are being charged from an external supply will be provided. This is required to be fitted at appropriate location on the appliance.

20.5 Following electrical fittings will be provided on the appliance at suitable locations

Hand Lamps	2
Battery operated siren 1km range	1
Fog Lamps	2
LED Light Bar with Inbuilt PA System with Multi tone Siren & Hooter in on Unit	
Search Light (min. 1000 Lum.) with 30 meters Cable Reel	1
Spot Light (mounted near driving compartment)	1
Inspection Lamp with bracket	1
LED flasher lights (both side & rear side) Red, Yellow, Blue & white etc.	6
LED WORK LIGHT –operated on DC mounted on top rail each side, @ 500lm Lighting power.	5
LED scrolling or flashing display sign board (scrolling letters willgiven by Fire Dept)	1
Reverse Sound Hooter, with Additional Lights and Reverse Camera with Picture Screen in Cabin	1 Set
Separate special Master ON/OFF Switch for all lights together, shall be give on Dash Board	1
Fire Bell made of Gun metal 250 mm	01
PUBLIC ADDRESS SYSTEM: Battery operated public address system Ahuja or equivalent make having range of the sound of the public address system would be within 500 mtrs & 12 volts power supply shall be drawn from the battery of the chassis should be provided. The PA system should consisting of amplifier, loud speaker and mike shall be fitted inside the drivers cabin in front of the officer's seat. Amplifier andmicrophone shall be clamped / fixed type in front of officer's seat. Horn unit / loud speaker shall be mounted on roof of the cabin.	01 No.

21.0 PAINTING AND MARKINGS:

21.1 The entire structure will be prepared by grinding the welded surfaces, priming the finished material with a zinc rich primer.

21.2 **Surface Preparation**: This would be poly- urethane (PU) based paint.

21.3 **Vehicle Exterior Paint**: The complete vehicle (all exterior surfaces) & monitor would be painted with at least 2 coats of zinc phosphate primer each of 50 microns DFT & 2 coats of polyurethane finish paint each coat of 50microns DFT. Further improvement on the paint maybe carried out by the manufacturer beyond that mentioned above, to give better protection & surface finish.

21.4 The entire appliance will be painted with Fire Red paint preferably of ASIAN PPG make using double coat spray painting on the outside. The user's (ULB's) name and logo will be written on both-sides with yellow colour (in English & Marathi).

22.0 Marking / Name Plates: All the lockers / cabins will be provided with SS name plates with letters itched on it boldly indicating the content

22.1 Each appliance shall be clearly and permanently marked with the following information:

a) Manufacturer's name, or trade-mark, if any;
b) Serial number of the pump body and year of construction;
c) Capacity of pump, in l/min;
d) Capacity of water tank, in litre;
e) Nominal speed, in rev/min;
f) Transmission ratio of the PTO;
g) Working pressure, in kg/cm^2;
h) Direction of rotation of the pump shall be indicated by an arrow and this shall be permanently marked on the pump body; and
i) Lubrication points, drainage devices, etc, shall be colour coded.
j) Engine & Chassis no.
k) Instructions for Driver in cabin

23.0 DOCUMENTS :

23.1 Following Documents has to be submitted during the bidding process and after the delivery such as :

General layout of the tender / equipment layout.

EN / CE Certificate as per applicability from third party (self-certification not permissible)

Flow diagram Eiectrical system

Locker drawings

User Manual and Instruction Booklet- Instruction books for the guidance of the user including both operation and normal maintenance shall be supplied for

all the equipment in English language. The books shall include an item wise and illustrated spare parts list giving reference numbers of all the possibly wearing parts. The workshop manual and spare parts catalogue of chassis shall also be supplied with vehicle preferably with soft copy.

24.0 ANCILLARY EQUIPMENTS :

The ancillary equipment as given in the Annexure – A shall be provided along with the vehicle. Depending upon the budget availability, the option at Annexure – B maybe looked into.

25.0 STAGEWISE INSPECTION.

25.1 Each stage wise inspection will be carried out by head of the local fire service or any authorized person by him. It is hereby suggested that there should be minimum three member panel in the inspection team.

25.2 Expenses towards lodging boarding of inspecting team members should be born by the Company. To and fro expenses towards the travelling of the team members from the journey place to the works will be borne by the successful tenderer and the offer shall contain all such expenses.

25.3 Advance notice of at least 1 week should be given by the fabricator; however the fabricator must keep the vehicle ready for stage wise inspection before giving such notice to Purchaser i.e Municipal Corporation / Council, as case, may be.

25.4 Following stagewise inspection needs to be carried out.

Ist stage Inspection	Body Structure Inspection Testing of Loose (unmounted) Water Tank and hydrotesting and sand blasting test
IInd stage inspection	a) Inspection of Panel Work. Hydrotesting of Pump b) Installation of Pump , PTO & Piping Prefinishing c) inspection d) Compliance of non-conformities, if any

IIIrd stage inspection	Stability (Tilt) test as per IS standard Gradient Test for entire vehicle Articulation Test for vehicle Road Test for full laden vehicle for min 30kms. Four Hours Pump Operation Testing, Monitor & Hose Reel performance test. Complete functions-operations of all systems installed. Checking of all catalogues, Operation manual of appliance Any Other : Test as may be required for Final Acceptance

25.5 Approval and Certification towards Chassis and BodyBuild Vehicle- After full Body Building, the entire vehicle should be got fully checked, examined and tested from the concerned chassis Manufacturer / Dealer and Test Report to the effect to be got by the Body builder party / Tenderer as follows –

Gradient Test. The vehicle will be tested on a gradient test ramp which has an angle of 1 Mtrs in every 4 Mtrs of distance travelled. The test will be done as per the Indian Standards.

Stability Tilt Test: The static stability of the appliance shall be checked such that when under fully equipped & laden condition (excluding crew), if the surface on which the appliance stands is titled to either side, to ensure that no overturning occurs till vehicle attains tilting if 27 -+ 1 degree from horizontal.

Endurance (Long Running) Test: The rating of pump would be min. 4 Hrs. The pump will be tested for a continuous period of 4 Hrs nonstop & the water will not be replenished in the radiator during this test. The engine shall not show signs of overheating during this test.

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

Other Test include Turning Radius Test, Road (Braking, Acceleration & Speed).

All these test needs to be cleared from ARAI (Automotive Research Association of India), Govt. of India OR from CIRT (Central Institute of Road Transport), and the Test Reports to the effect to be got from the Body Builder / Tenderer.

DIRECTORATE MAHARASHTRA FIRE SERVICE ★ GOVERNMENT OF MAHARASHTRA

26.0 TRAINING

26.1 The successful tenderer has to arrange training for the personnel of fire brigade department in handling, operation and maintenance of the above equipment. The training of minimum 4 sessions either at Fire Station of the concern ULB's or any other suitable location mutually agreeable to Head of the Fire Service of the ULB's and the contractor. The training shall cover operation, handling and maintenance of all the tools equipment and gears listed under this tender.

26.2 All the expenses towards the training shall be included in the cost in addition to training material and the cost of tools and equipment and consumable required at the time of training. The training program shall be chalk out in consultation with Head of the Fire Service or any other officerauthorized by the him.

27.0 COMPREHENSIVE SERVICE MAINTENANCE CONTRACT (CSMC):

27.1 The Contractor shall offer the vehicle with three years COMPREHENSIVE SERVICE MAINTENANCE CONTRACT which includes the cost of repairing of vehicle at periodic intervals or at the time of break down of vehicle including the supply of original spare parts.

27.2 The CSMC shall be for superstructure as well as for the chassis. The servicing of the superstructure and the chassis shall be carried out strictly as per the manufactures recommendations at periodic intervals.

27.3 During the contract the vehicle shall be checked periodically at the interval of every three months and all the test and checks shall be carried out as per manufacturers recommendations.

27.4 The spare parts used at the time of periodical servicing shall be original and brand new.

27.5 Any break down of the vehicle shall be attended within 72 hrs. from the time of intimation of break down (telephonic / written) to the contractor.

27.6 The servicing and repairing of vehicle including chassis shall be carried out through skilled workers as certified by the manufacturer (within the ULB's District Region).

27.7 All the tools, consumables etc. required for the servicing of the vehicle shall be arranged by the contractor.

27.8 The servicing and repairing of the vehicle shall be carried out either at the fire station or at the fire brigade workshop or at the authorized workshop of vehicle manufacturer.

27.9 The complete servicing of the vehicle shall be carried out well in advance as per the provisions of Motor Vehicle Act and Central Motor Vehicle Rules whenthe vehicle is due for renewal of mechanical fitness certificate.

27.10 Any break down of vehicle on emergency call or on road shall be attended immediately.

27.11 The complete servicing and repairing of vehicle shall be carried out under the supervision of technical officer of fire brigade department and all the instructions (oral or written) given by him time to time shall be incorporated / attended.

27.12 Any damage to the vehicle due to in proper handling or due to accident shall be attended promptly and the cost on account of such repairs including the cost of spare parts shall be got approved from Head of Fire Service prior to suchrepairs.

27.13 Any dispute arise out of this contract, Municipal Commissioner / Chief Officer will be the final authority and the decision given by him shall be binding to both the parties.

27.14 The tenderer shall give the details of work to be carried out at periodic interval of three months along with the offer.

27.15 The contractor shall maintain the log book of the vehicle and shall enterall the details of repairs /service of the vehicle carried out time to time and sameshall be got certified either from Officer in charge of the fire station or from workshop in charge.

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Table 1 Pump Performance Data

Sl No.	Output Litres/minutes	Pressure Kg/cm2	Lift M	Remarks
(1)	(2)	(3)	(4)	(5)
i)	2000 / 3000 / 4000 / 6000	7	3	When working through two 2.45 m Lengths of specified suction hose
ii)	1600 / 2400 / 3200 / 4800	8.8	3	When working through two 2.45 m lengths of specified suction hose
iii)	720 / 950 / 1400 / 2100	7	7	When working through 9.8 m, that is four 2.45 m lengths of specified suction hose
iv)	300	35	3	When working through two 2.45 m lengths of specified suction hose

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