Surat Municipal Corporation

Fire & Emergency Services

Head Quarter, Muglisara, Surat : 395003

Phone : 0261-2423751-56 Control room : 24141495-96, Fax : 2451935 Mo.9724345553

To,

.....

.....

.....

Sub: Providing Quotation for Chassis And Fabrication of Water Tanker-12 Nos.
(Quotation provide only for finalized of estimated cost)

Dear Sir/Madam,

Sealed quotation is hereby invited for Water Tanker-12 Nos. by meeting the below mentioned minimum specifications.

Sr. No.	Name of Work	Rate per Unit in Rs. (Incl. all Taxes)	Unit	Total Amount (Incl. all Taxes)
1	Supply of Chassis And Fabrication Water Tanker		12	
	• As per Annexure - A			
	TOTAL			

❖ **TERMS & CONDITIONS:**

1. Quotation once offered shall not be withdrawn by Vendor.
2. Quotation once accepted shall be binding to the Vendor/Contractor.
3. The rates quoted must include all taxes, duties/levies, GST (Goods and Service Taxes) freight, insurance, transportation, delivery, and loading unloading at the site etc.
4. Payment will be made after successful completion of work, and it may take at least 1- month time to complete the process of Payment subject to fulfillment of entire document related criteria required by the Account/ Audit department of SMC.
5. Firm who have not registered party code in SMC, may also apply for the said work subjected they have to generate the party code of the payment purpose by submitting required documents.
6. Quotation received after due date will not be considered.
7. Quotation sent by post or courier of services or in person is preferable.
8. The contractor will submit the invoice to the SMC having GSTIN of SMC mentioned therein and the taxes shall be shown separately on the face of the invoice to claim as ITC by SMC.
9. Sealed envelope should bear on top: **Providing Quotation for Chassis And Fabrication of Water Tanker-12 Nos.**
10. Quotation must be sent in sealed cover on or before 05/05/2025 up to 18:00hrs to the below mentioned office:

    Chief Fire Officer
    Fire & Emergency Services,
    2nd floor, Muglisara Fire Station,
    Gordhandas Chokhawala Marg,
    Muglisara, Surat, Gujarat - 395003.

Enclosure: Annexure - A

-Sd-

FES/Outward No.305
Date:23/04/2025

Chief Fire Officer
Fire & Emergency Services
Surat Municipal Corporation

ANNEXURE – A

Technical Specifications

General:

Scope:

These specifications cover the requirement regarding design, procurement, fabrication, testing & supply of Water Tanker (Fire Vehicle) complete in all respect to be used for the fire fitting. The scope of supply will be inclusive of but not limited to the following:

- Chassis
- A centrifugal type fire pump (2250lpm at 7 kg/cm2)
- Power takes off unit (PTO) unit
- Water Tank 8000 Liters (MS)
- One hose reel
- Body fabrication
- Accessories & spares As Per Appendix-A
- Piping necessary controls fire hoses etc. complete in all respects
- Cooling system of indirect type with open circuit

1. CHASSIS

The WATER TENDER shall be fabricated on a suitable 19 Ton (18.5 MT) (4x 2)- BS-VI or above, Cabin Chassis with 4200 mm WB & 210 HP Engine. Drag hook or eye of adequate strength and design shall be provided at the rear & front of chassis by the vendor. BS-VI chassis shall be provided for WATER TENDER.

2. DESIGN & CONSTRUCTION

The Water Tender 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 Water Tender shall be supplied complete with all the equipment's & 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/ treatment/ paint (epoxy coats)/ zinc coating etc.

The successful bidder shall submit weight distribution chart along with design of supporting structure.

3. PUMPING SYSTEM

The pump fitted on the Water Tender shall be a (CE certified/ UL listed), centrifugal pump, capable of delivering, not less than 2250 LPM @ 10 Kg/sq.cm. The quoted Fire Pump shall

be CE certified to EN 1028-1 and 2, its subsequent amendments (2008 or above) with EN 1050 and ISO 14121. The pump shall be of (CE certified/ UL listed), with CF8/GM. Fabricator shall not make any modification (manifold etc.) in pump and shall provide pump having 4 deliveries from OEM. The warranty shall come in to effect from the date of supply

of Water Tender. The OEM priming system shall be twin piston reciprocating type, which shall be capable of lifting water from 7 Mtrs. depths within 30 seconds when tested. The primer shall be capable of working even if left dry over extended periods. The pump shall 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 catalogs/ brochure/drawings etc. 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.

4. Pump Suction Inlet

The suction inlet of the pump shall be capable of being connected either directly to hydrant discharge outlets through headers or to the water tank of the vehicle. It shall be of a suitable size to give the rated output of the pump, but not less than 140 mm. The inlet shall be of male round-threaded type & shall be provided in such a way that it is convenient to take water from outside sources like open wells with metal type removable strainer. The connection from the water tank to the pump shall be suitably sized (min 150 mm) to allow full pumping at the rated output. A ball/ butterfly valve of good quality shall be fitted between the suction inlet of the pump & the water tank. Stainless Steel strainer shall be fitted inside the tank on the pipe outlet to pump.

5. Pump Discharge Outlets

There shall be 4 outlets of standard size (63mm) with screw down type delivery valves, having female instantaneous couplings. The pump shall have multi volute design for required pressure. Fabricator shall not make any modification (manifold etc.) in pump and shall provide pump having 4 deliveries from OEM. A ball/ butterfly valve of good quality shall be fitted at the starting point of the water flow to the monitor. A second valve shall be provided at a suitable place near the base of the monitor. 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 shall hold the pressure.

6. Pump Mounting

The pump shall 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" channels/ plates only. The mounting shall 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 cover/ guard so that injury is minimized during operation or maintenance of the pump. The guard shall be bolted and easily removable.

7. Pump Material of Construction

The Pump body/ casing, impeller, delivery outlets, etc. shall be made of CF8/GM. The wearing rings & other parts that may be subject to frequent wear shall be of renewable type. The impeller shaft shall be of SS confirming to IS:6603 & shall be carried in anti-friction bearings as per the pump manufacturers standard design. The impeller neck rings & impeller rings shall be renewable type The bearing housing shall be of Cast Iron for better heat dissipation. An easily accessible drain valve made of SS304 shall be provided at the bottom of the casing to enable easy draining of the complete system.

8. Pump Shaft Sealing

The shaft sealing shall be of self-adjusting type. The sealing system shall be as per pump manufacturer's standard design. The mechanical seal assembly shall with stand dry running of pump up to 2 minutes without any damages.

9.Pump Control Panel

The pump control panel shall be supplied and designed keeping in mind ease of operation as well as maintenance. The control panel shall be ergonomically designed with the following:

- Pump to Delivery Outlets
- Pump to Monitor
- Pump to Tank Filling
- Pump to Cooling line
- Tank to Pump Suction
- Outside source to Pump suction
- Water Level Indicator
- Throttle Control for engine
- Pressure Gauge
- Compound Gauge

Note: The above-mentioned connections are the min. requirement. Other connections/ controls as may be required can be provided by the buyer. 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.

10.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 OEM priming system shall be twin piston reciprocating type or water-ring type primer which shall be capable of lifting water from 7 meters depth within 30 seconds when tested. 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 primer shall get automatically disengaged once the pump is registered the pressure. The system shall be maintenance free to the extent possible & shall be constructed of suitable materials to prevent corrosion due to salty/ brackish water

11. POWER TAKE OFF

The PTO for the pump shall be of VAS/FIRE HAWK of suitable ratio for the rated output of the pump & the torque of the vehicle. The lever/switch for engaging the P.T.O. shall be provided in Driver's cabin. Inspection/ maintenance hatch of removable type shall be provided at suitable places for gaining access to gear box/ 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. 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.

12. COOLING SYSTEM

In addition to the radiator cooling, an indirect cooling system of the open circuit type shall be provided if required to keep the engine from overheating during extended use in tropical climates & when the ambient temperature is over 40 C. The cooling system shall be so designed that the full power output of the engine can be maintained during continuous stationary running without overheating. The operating temperature of the engine cooling water shall be thermostatically controlled. The oil in the sump shall be prevented from overheating & the pump characteristics shall be chosen in a manner so that the engine does not run at its maximum speed for the required output. The cooling water outlet pipe from

P.T.0. & Additional cooling tank/ heat exchanger shall be connected through a suitable diameter pipe. The end of the pipe shall terminate in a threaded connector.

13.WATER TANK

The Water tank shall be of min. 8000 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 shall be fabricated out of MS platesof min. 5 mm thick for the bottom & 4 mm for the sides. The top & baffle plates shall be of 3 mm. The tank shall be of welded construction & shall be die-pressed on all sides to prevent distortion &to ensure torsional rigidity. Due care shall be taken to ensure that butt-weld joints are minimized. Wherever butt joints are unavoidable, they shall bè radio- graphically tested. The test films & reports shall be submitted at the time of stage inspections. All other joints shall be DP tested for soundness of weld joints. Complete welding shall be done using Gas Tungsten Arc Welding (GTAW) process with electrodes.

14. Baffles

The tank shall be suitably baffled longitudinally and transversally to prevent surge when the vehicle is cornering or braking. The baffle plates shall be of minimum 3 mm thickness bolted type. The fasteners used shall be SS material only so that they do not freeze due to rusting.

The nuts shall be tack welded to the baffle plates. The baffles shall be so designed that they do not buckle under any circumstances during braking cornering or accelerating. The baffles shall be arranged in a manner to facilitate easy cleaning of the tanks.

15.Tank Mounting

The water tank shall be mounted on the vehicle on a subframe using Plate (made from MS)\with chassis using high tensile bolts. This subframe shall be made from Anti-Corrosive Treated MS 4" section and shall be bolted with the chassis using the high tensile bolts. 'U' Bolts not be shall be used for mounting of tanks on vehicle. Tank shall be mounted on the chassis in a manner keeping in view the proper load distribution on the axles. The tank shall be mounted on two/ three cross bearers to counteract stresses caused by chassis flexing. The Centre of Gravity shall be maintained as low as possible. 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 hooks/ lifting eyes shall be provided on top of the tank to enable it to be lifted off the vehicle for maintenance/ repairs. The bottom of the hooks shall be suitably reinforced with pads to avoid stress on the tank top plate. Sides of tank shall be die-pressed to give additional strength & stiffness so that it does not distort due to chassis flexion.

16.Connections for Filling

The tank shall have a filling orifice of 250 mm and 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 & shall be clearly marked with the words (either etched or raised) "WATER". This port shall be used for filling the water tank from overhead storage tanks. Apart from the above, two more filling connections shall 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 shall 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. Valve may be of NRV / Ball

/butterfly type. One connection shall also be provided for filling tank from pump itself. Connection shall be taken from pump manifold & shall be controlled by a shut-off valve.

17. Draining, Cleaning & Repairs

A 50mm diameter drain line with a ball/ butterfly valve shall also be provided to drain the tank for maintenance/ cleaning/ repairs etc. A cleaning hole of 250mm shall be provided at the bottom of the tank &shall 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 tyre slippage.

Suitable lifting lugs shall be provided on the shell of the tank to enable it to be lifted off vehicle for repairs/ replacement as necessary.

18.Over flow

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 shall be suitably changed to accept the additional flow. As a thumb rule, the diameter of the overflow pipe shall 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 shall be of 200 mm diameter. This is to ensure that the tank does not get unnecessarily pressurized. The overflow pipe shall 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.

19. Miscellaneous

The tank shall be connected to the Pump with a butterfly valve for ease of operation. The tank shall be hydraulically tested at 0.5 kg/cm2 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. The inlet line in the tank shall have an adequately strong deflector plate, which shall avoid the incoming jet of water from hitting the tank side/roof. All plumbing shall be reasonably accessible for maintenance purposes. Screwed bends, joints shall be avoided as far as possible. All the joints shall be flanged type & shall have O ring sealing. Rubber gaskets shall not be used anywhere in the plumbing. All the outlets and inlets from the tank shall be taken by installing nozzles of suitable length and reinforcement pads.

20. Electronic LED Indicators

Electronic LED Water Indicators indicating the tank levels as EMPTY, 1/4,1/2,3/4 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 an 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.

21. PIPING &VALVES

Complete pipeline circuit on the vehicle including water lines & fittings shall be of GI material only, including all water lines. All valves (AUDCO/L&T) up to 2" size shall be lever operated SS304 ball valves & all valves above 2" size shall be normal ball/ butterfly valves but made of SS3304. Seats of the valves shall be easily replaceable, readily available & at least 2 sets of spare seals shall 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.

22. BODY WORK

The WATER TENDER shall be supplied with original single Cabin with seating arrangement and doors for Driver and Officer. The cab and lockers shall be of composite construction with sufficient rigidity and reinforcement and shall be kept as light as possible. Pressed sections of 40 mm x 40 mm x 2 mm thick corrosion free 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 corrosion free/ Square tubes sections constructed with bolt and nut system without welding work and panelled with aluminum plate by means of glue without any welding work. Mild Steel shall not be used in structure anywhere. Roof panels shall be made of MS plates. The roof shall be strong enough for being walked-on and must be sufficiently supported. The intermediate walls and shelves shall be constructed from aluminum sheets panelled to the Corrosion Free Sections/ Tubes structure by means of glue without any welding work. The outer and inner panelling of the superstructure shall be done from 2 mm aluminum sheets. The complete top of the rear superstructure would be covered with 2 mm aluminum chequered plates/ suitable anti-skid material. The sheets of the outer panelling shall be bonded/ glued to the skeleton framework. Rivets/ screws shall not be allowed. The area over the tank shall be suitably treated for slippage by chequered plates or anti-skid material. The doors of the cabin shall be fitted with toughened glasses & winding type regulators. The driver shall be provided with good quality 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 shall be as per the latest national/ 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.

23. Lockers

Suitable lockers shall be provided for storage of equipment's & accessories wherever required. Size and number of lockers shall be decided at the time of stage inspections. The lockers shall 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 shall be strapped/ clamped in a neat & convenient manner so that it has an identified place. All lockers shall be suitably labelled so that each item shall have identification when it is required to be accessed. For all water fittings like branch pipes etc. quick release type couplings shall be provided, which shall enable the operator to locate the desired equipment instantly & save valuable time.

24. FITTINGS & ACCESSORIES

Following accessories shall be provided on the appliance

a) Two Spot lights in front (Hella make)
b) Two Fog lamps (Hella make)
c) Four Blinker type traffic indicators (OEM supplied)
d) One Removable type search light (LUMAX/ CANARA) with 30 Mtrs. cable & tripodstand.
e) LED Light bar min. 1200 mm wide with Aluminium Housing and max. 90 mm height with Blue and Red lighting shall be provided on top of the fire vehicle.
f) PA System &Hooter of PHILIPS/ AHUJA/ GRAND make shall be provided.
g) Double Extension Type Ladder gallows shall be provided on the roof suitable for fixing a10.5 mtrs heavy duty trussed type aluminum extension ladder. 10.5 m Simplex ,King's -01 No
h) Hooligan tools -01 Nos.

A P P E N D I X A

SCHEDULE OF EQUIPMENT TO BE SUPPLIED WITH THE APPLIANCE

Aluminum Extension Ladder 10.5 m Simplex ,King's -01 No

Armoured suction hose complete with round thread couplings to suit the pump inlet — 2.5 m long (see IS : 2410-19633) and IS : 902-19744) 4 lengths

Delivery hose, 63 mm, rubber lined in 15m lengths (see type II of IS : 636-19795) complete with instantaneous couplings (see IS : 903-19756) 12 Nos.

Suction strainer for item 2 (see IS : 907- 19657) 1 No Basket strainer for item 2 (see IS : 3582- 19668) 1 No Suction wrenches (see IS : 4643-196811) 1 pair

Short Branch pipe (see IS : 903-19756) 2 No's First aid box for 10 persons 1 No

Tool kit 1 No