



**OFFICE OF THE ADDITIONAL DIRECTOR GENERAL OF POLICE
FIRE AND EMERGENCY SERVICE
GANGTOK – 737101**



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No. 678/POL/F&ES/2014/281

Dated: 10/12/2014

TENDER DOCUMENT

1. Last date and time for receipt of tender documents: 10.01.2015 at 1200 hrs.
2. Opening date and time for tender: 12.01.2015 at 1400 hrs.
3. Place: Office of the Director, Fire & Emergency Service, Gangtok.

M/s.

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SUBJECT: TENDER FOR THE FABRICATION OF FIRE TENDER TYPE "B"-3 NOS. FOR FIRE BRIDGADE USE AND SUPPLY OF FIRE FIGHTING EQUIPMENTS.

Sealed tenders are invited on behalf of the Governor of Sikkim for the fabrication of Fire Tender on 709/LPT Chassis and supply of fire fighting equipments as per following details and terms and conditions given below:

SL. No.	Particulars of items with specifications	Quantity	Unit	Rate per unit
1	Supply of Fire Tender Type "B" fabricated on 709 LPT Tata Chassis having power steering and double cabin and other requirement as per IS:950-1980.	03 nos.		
2.	Nomax fire retardant suit complete with helmet, visor, gloves and gumboot.	30 nos.		
3	Short branch (gun metal)	10 nos.		
4	Fireman Axe with pouch	30 nos.		

Terms and conditions:-

1. Make and specification of the power take off gear should be clearly mentioned in the tender.
2.
 - a) Tender should be submitted along with details of rates and schedules of items with full specification duly signed on each page by the tenderer under his seal.
 - b) Earnest Money: The earnest money in the shape of a Demand Draft should be enclosed with the Tender documents drawn in favour of Director Fire & Emergency Service payable at SBI or CBI Gangtok for Rs. 1,00,000/- (Rupees one lakh) only. No interest shall be paid on earnest Money Deposit. Earnest Money Deposit shall be released /refunded after completion of fabrication and satisfactory supply of appliance and accessories. No Tender will be accepted without earnest money.
 - c) The Firm/Fabricator should have supplied a similarly fabricated Fire Tenders along with equipments to at least two States or Central Fire Departments of Police or Defence or PSU's during the last three years. If so, the PO's of the same to be enclosed with the tender documents.
3. **PRICE**
 - a) Rate quoted should be F.O.R Gangtok.
 - b) Rates quoted by the tenderers should be expressed in figure as well as in words over writing and correction in the tender form will be liable for rejection.
 - c) Rates quoted should be inclusive of all taxes and duties. If these are payable extra, it should be stated clearly along with the rates. Income tax will be deducted at source as per Government norms.
 - d) Rates for fabrication and equipments/accessories should be quoted separately per unit.

4. **SPECIFICATION:**

TECHNICAL SPECIFICATION FOR FIRE TENDER FABRICATION ON TATA 709 CHASSIS:-

i. GENERAL BODY WORKS:

The body frame shall be of M.S. extended square closed. Tube and suitably re-in forced with gussets at joints. The frame shall be bolted to the chassis members by means of "U" bolts with double check nuts. Outside frame cladding made of rolled aluminum sheets welded in seams. Chromium plated grab rails and non-skid steps to the provided wherever required to assist fire crew to mount and dismount and where necessary to give access to the roof of the appliance. Chassis- cross members shall be of M.S Girders & Extruded Square closed tube & shall be treated with Zinc Rich Epoxy Primer Paint (Epilog-4) & with coal Tar Epoxy protective coating (Epilux-5) after sand blasting. For flooring aluminum chequered plates to be provided wherever necessary (Thickness not less than 5mm). The body shall be so constructed that the overall longitudinal distance between the centre of rear axle to the extremity shall not exceed beyond 45% of the wheelbase at the maximum (with the exclusion of rear and bumper). The interior of the body shall be adequately ventilated. The design throughout shall ensure robust construction & shall facilitated easy maintenance and replacement. The ground clearance of the vehicle should not be less than 360 mm and width should not cross 2.50 mar. The construction of the super structure should not exceed the angle of approach departure below 30 degree. The highest part of the fire truck should not exceed 3.8 meter.

ii. WATER TANK:

A Water Tank shall be installed on the Fire Tender. The tanks have the following parameters:

Capacity	2000 Liters
Material of Construction	MS
Bottom Plate Thickness	5mm
Side Plate Thickness (Die Pressed Stiffened on Two Sides)	4mm
Top Plate Thickness	4mm
Baffles Thickness	3mm
Numbers and Size of manhole	1X 450 mm
Numbers and Size of cleaning Hole (Bottom of Tank)	1X 250 mm
Drain Pipe on Cleaning Hole	25mm
Overflow Pipe Size	100 mm
Tank Filling Line Size	80 mm
Number of Tank Filling Connections	2 X 63 mm
Tank to Pump line Size	100 mm

iii. DESIGN:

The Water Tank shall be designed to carry 2000 Litres of Water in excess of the designed capacity. The Water Tanks 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. An inspection manhole will be provided on top of the tank. The manhole will have a hinged cover so that the manhole will also act as a filling orifice. Cover will be marked with the word "WATER".

Suitable eyes will be provided on the shell of the tank to enable it to be lifted off the vehicle for repairs when required. 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. The tank will be fitted with an overflow pipe taken down to a point well below the chassis that discharges the water away from the wheels. Hydrant connection incorporating a strainer will be provided for filling the tank. A pipeline will be taken from the tank to the suction inlet of the pump incorporating a quick action butterfly valve. The tank will be connected with the pump in such a manner that pressurization of water tank or water tank pump connection is avoided when pumping water from an outside source of supply.

iv. FOAM COMPOUND TANK:

A Foam tank (without supply of foam compound) shall be installed on the Fire Tender. The tanks have the following parameters:

Capacity	500 Litres
Material of Construction	SS304
Bottom Plate Thickness	mm
Side Plate Thickness (Die Pressed Stiffened on Two Sides)	3mm
Top Plate Thickness	3 mm
Numbers and Size Filling hole	1X150 mm
Size of Sludge Trap (Bottom of Tank)	150mm
Drain Valve on Sludge Trap	25 mm
Tank Filling Line Size (Connected to Foam Transfer Pump)	25 mm
Tank to Inductor Line Size (for pump capacities up to 2250 LPM)	25 mm
Tank to Inductor Line Size (for pump capacities above 2250 LPM)	40 mm

Foam compound tank of 500 Liter. Capacity shall be mounted on the chassis near water tank. It should be fabricated out of stainless steel of mm plate for bottom & 3 mm (stainless steel 316) quality sheets for side & top with welded COnstruction. The tank will be PRP lined & provided with suitable baffles with the following connection. Clearing machine with removable cap 400 mm diameters on top. Filling orifice of 150 mm dia, fitted with stainless steel threaded cap with a removable strainer.

Venting arrangements & raw off tube shall be connected to be foam Proportioned & pump with selector valve/strainer. The draw off tube shall have a NRV in addition to main valve. The adequate provision for draining, flushing or clearing the foam piping shall be made. The tank must be epoxy painted inside.

The tank shall be separated and distinct from the water tank having suitable 4 no. Hook for lifting the filler cap should be clearly marked ' FOAM'.

Provision of automatic venting of the foam tank when the foam compound is drawn from it or when the tank is being filled.

v. FOAM COMPOUND PROPORTIONER/INDUCTOR:

Automatic foam proportioning device capable of proportioning foam liquid with monitor & with handling equip. independently in conformance IS 951.

vi. FOAM MONITOR:

Foam shall be mounted with a deflector for coverage of 55-60 meters horizontally in still air, on the roof of the cabin manually operated without any obstruction to its rotation. The monitor shall be lever operated & shall be capable of traversing through 360 degree in horizontal plane, elevating from horizontal to 45 degree depressing from horizontal to 15 degree & fully rotating in both sides. This shall be changeable from jet to spray instantaneously by lever. A suitable place shall be provided for the operator to stand & operate the monitor comfortably in any direction.

vii. SEATING ARRANGEMENT:

Drivers Compartment:- One seat with backrest of foam type materials covered with good quality Rexene shall be provided for the driver and one Officer/Crew Chief each. The Driver's seat will be of adjustable type. The other seat will be of fixed type. The seats will be of foam rubber cushion type 3" thickness and 2" thickness of the back.

Rear (Crew) Compartment: At the back of the driver seat will be a crew compartment with one row of Dunlopillo and Rexene covered seat to accommodate five (5) firemen. The top of this compartment will also be made of M.S Extruded Square closed Tube frame (30 mm X 33 mm X 2 mm) covered with aluminum sheet (16 gauges). The inside of the compartment will be paneled by aluminum sheet (16 gauges). A suitable opening will be provided in the cabin for operating the monitor.

viii. ENTRANCE DOOR:

There will be four entrances, two in the driver's compartment & two in the crew compartment. The doors will be opened outwards & will be fitted with best quality safety glasses of reputed make. The door handles will have chromium plated. The doors shall be provided with locking arrangements.

ix. FRAME:

The side frame shall be made of M.S Extruded Square closed. Tune posts connected with suitably disposed roof, rails within gussets and fully welded. The top roof sticks having suitable curvature from centre shall be suitably reinforced to take up the weight of the gallows with extension ladder & four length of suction hoses. The other gallows shall either be fitted on the brackets on front bumper or any other suitable position. The rear frame shall consist of upright M.S angle jointed at the ends as for side frame, side posts shall be reinforced with gussets plates fully welded on either side. All the structural members to be painted with zinc rich, Epoxy primer paint (Epilux-4) and with coal tar Epoxy protective coating (Epilux-5) after sand blasting. Drag hook or eye of adequate strength and design shall be provided at rear of the chassis.

x. LOCKERS:

There shall be six lockers three in either side. The lockers shall have outside access and they shall be weather proof as far as possible. The lockers design shall land a pleasing appearance of the fire truck but not at the cost of functional suitability. Lockers shall be accessible from ground level to a man of average height 1.67 meter). Door lockers shall open in such manner that they offer no injury hazard to the personal in open position and stay or supports can be released by one man to close the doors. The locker should have self draining of all wash-down water and should have internal lighting which shall be capable of automatically switched "ON & OFF" by the

closing of the doors. A master switch for isolating the lockers lighting shall be fitted in the drivers cabin provision to store two breathing apparatus sets to be provided in the lockers. Lockers should also accommodate for storing 20 (twenty) Nos of 22.5- meter length of fire hose made in wet condition (dial18) and other firefighting equipment and small gears. Lockers floor structure shall be made of two nos. M.S. channels (6mm) over three nos. M.S. angles (50 mm X 50 mm X50 mm) and covered by 16 gauge aluminum chequered plate.

xi. LIGHTING:

Roof lighting shall be provided in the driver & crew compartment with an independent switch on the dashboard. Adequate lighting arrangements shall be, provided for the toolboxes for internal lighting arrangements headlamp, side lamp, tail and stop lamp, traffic indicator lamps and rear nose. Plate lamp as per motor vehicles act to be provided. A spotlight is also to be provided on the driver's sides with suitable arrangement for maneuvering beam goes light from driver's cabin. Emergency Light bar with speaker system. Heavy duty LED search light.

xii. ROOFING:

The roof shall be covered with 3/8 thick toughed and grooved ceiling of hardwood suitably treated against timber rot and other posts, covered with water proof sheeting and furnished with coat of epoxy resin compound. This shall be covered with rolled aluminum sheets as roof covers. Use of screws and bolts on the roof shall be eliminated as far as possible. Water channels of suitable side shall be fitted outside along with entire roof edge on either side & shall be overlapped by the roofing panel. The windscreen glass shall be of quality, safety glass fitted within waterproof channel & chromium plated frame, windscreen and wiper to be fitted on the driving as well as non- driving sides.

xiii. OTHER FITTING:

Fire Pump: The fire pump shall be suitably mounted on rubberized pads at the rear in suitable position so that the load on all parts of the vehicles is evenly distributed. The pump shall be driven by the transmission shafting fitted with universal joint by the vehicle main engine through a full torque power take off unit. The fire pump shall of indigenous make, single stage centrifugal type having minimum capacity of 1400 liters per minute at 7kg per cm². The pump should have a drain- plug at the bottom of the casing, gland of self adjustable type and impeller should be well balanced the pump shall be of following materials.

Pump body- Gunmetal/Light alloy

Impeller- Phosphor Bronze

Pump shaft- Stainless steel 4 (four) neck ring bronze

Bearing- antifriction external casing type

Suction inlet eye minimum 100 mm diameter with round thread of gun metal with removable type strainer and chrome plated blank cap, with suction marked on it. Blank cap shall be provided with chain.

A4 (100 mm) pipeline shall be provided from the water tank to the main suction inlet. A suitable gate valve/butterfly valve shall also be fitted near the pump on the water tank-pump feeding line. There will also be pipe of suitable dimension having a gate valve/butterfly valve and instantaneous coupling at the end which can be used for filling the tank from main pump as a discharge line or as a feed for another pump or trailer. Suitable control and gauges, which are as follows, shall be incorporated on the fire pump for easy observation of the pump.

Pressure gauge to read 0 to 200 PSI or metric equivalents.

One compound gauge 0 to 30 PSI and 0 to 30 mercury vacuum or metric equivalents.

Panel light with its switch.

Positive locking screw wheel type throttle lever shall be provided.

PRIMER: The rotary water ring primer shall be fitted which is automatic in action and it shall disengage automatically as soon as the pump is primed. It shall be capable of lifting water at least 7 meter in not more than 30 seconds.

COOLING SYSTEM: In addition to normal radiator an indirect cooling system or open circuit type consisting of special heat exchanger to the vehicle engine shall be provided in order to maintain its continuity during pumping without overheating.

xiv. HOSE REEL:

One first-aid hose reel shall be provided & mounted so as to be accessible for use from either side of the appliance. Swiveling guide rollers shall be fitted, where necessary, to prevent tubing from kinking. Hose reel shall hold not less than 60 mm Of 19 mm bore tubing hose in convenient lengths, terminating in dual purpose shut- off nozzle. Crows foot coupling shall be used to join together the lengths of hose & two couple one end of the hose reel & the other to the shut –off nozzle. The tubing shall conform to IS: 5132- 1969 or with its latest amendments. The reel shall be provided with friction break to prevent over run of tubing affecting easy run of reel. Plumbing between the pump and hose reel shall have clear and unobstructed waterway of not less than 25mm throughout without any restriction. The working pressure of the tubing shall not be less than 7kg/cm² and shall be of 60 m long. Flow to the reels should be controlled by manually operated ball type valves suitably located for ease in operation.

xv. LADDER:

A 10.50 mm long aluminum two pieces extension shall be mounted on suitable gallows fitted with rollers and designed to facilitate easy and quick removal of the ladder by one from the rear of the appliance. The ladder shall conform to IS: 4751.

xvi. INSTRUMENT AND CONTROLS:

Adequately illuminated pump control panel shall be provided at rear side of the appliance with following controls.

Auxiliary throttle control for engine.

Pump pressure gauge (calibrated to 25 kg/cm²)

Compound gauge.

Water level indicator (Glass tube type)

Foam level indicator (Glass tube type)

2 nos. 63 mm dia female instantaneous delivery outlets of pump with valves.

1 no 100 mm suction inlet of the pump.

Control for flushing out the foam equipments and piping

Hose reel control

2 no hydrant connection grown up.

xvii. WORKMANSHIP AND FINISH:

The gross vehicle weight (GVW) of the complete foam crash tender should not exceed GVW of chassis. All exposed ferrous metal surfaces except chrome plated or stainless steel be thoroughly cleaned, prepared and painted with fire red color to shade no. 536 of IS: The paint shall conform to IS:2932.

xviii. ACCESSORIES FOR FIRE TENDER:

Sl. No.	Description	Qty
1	PVC Suction Hose with Round Threaded Couplings to suit the pump inlet- 2.5 m	4
2	Suction Strainer for item 2	
3	Basket Strainer for item 2	1
4	Pair of Suction Wrench	1
5	Long line, 50 mm circumference, 30 m long	1
6	Short line, 50 mm circumference, 15 m long	2
7	Hydrant Valve Key & Bar (set)	2
8	Hand Controlled Branch Pipe	1
9	Universal Branch Pipe	1
10	Branch with Revolving Head	1
11	Short Branch Pipe (fitted with tips of 12 mm, 16 mm, 20 mm & 25 mm)	1
12	Nozzle Spanners	4
13	Electric Hand Lamp with rechargeable battery	2
14	Hand Lamp (Torch- 4 cells)	2
15	First Aid Box for 4 persons	2
16	Hydraulic Jack- 7.5 ton	1
17	Tool Kit	1
18	Fire suit with helmet, gloves and boots	1
19	Tool Kit	2

4. **INSURANCE:** The rate quoted should be inclusive of the transit insurance to Gangtok and it shall be at the cost of the tenderer.
5. **WARRANTY:** The appliances, accessories, equipments and pumps should be guaranteed in all respects for a period of 365 days from the date of acceptance at Gangtok.
6. **VALIDITY:** The rates quoted shall be valid for one year from the date of opening of the tenders.

7. **DELIVERY:** Within 90 days from the date of receipt of supply order, failing which the supply order is liable to be cancelled and the earnest money deposit will be forfeited as a penalty.
8. **PAYMENT:** 100% after delivery and Final Acceptance Test at Gangtok. Documents through bank will not be accepted.
9. **INSPECTION:** Stage inspection and final inspection and testing of the appliances will be done at the cost of the concerned firm by authorized representative of Sikkim Fire & Emergency Service at the fabricator's workshop and acceptance test at Gangtok at the time of delivery.
10. **REGISTRATION/LICENCE:** The Xerox copies of the Trade Licence/Authorised Dealers/manufacturer to deal with the fabrication work and equipments as well as experience certificates of such fabrication should be enclosed along with the Tender.
11. The firms having valid DGS&D rate contract should submit the valid certificate of the DGS&D rate contract.
12. **PROFESSION TAX:** Professional Tax clearance from commercial Taxes, Finance, Revenue & Expenditure Deptt. Govt. of Sikkim has to be enclosed with the Tender or to be submitted along with the bills for payment.

Sd/-
Director
Fire & Emergency Service
Govt. of Sikkim, Gangtok.