

### Detailed Specification

Enquiry:MM/172/G30163

#### Contact Details

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Please submit your offer for supply of the following items as per the instructions, technical specifications and other terms and conditions specified herein/ attached.

#### Note:

1. The delivery period mentioned in the BoQ is our indicative requirement. You may offer your earliest delivery period.

Please refer our above referred enquiry number in all correspondence.

SL No.	Material Code	Detailed Specification/s	Quantity	Unit of Measure
1	601915300	MULTI-PURPOSE FIRE TENDER: Design, Body Building cum Fabrication and supply of Multipurpose Fire tender on a chassis with equipments, accessories, tools, electrical items, mandatory pump and PTO spare parts as per the attached TPS No: FACT/FIRE SERVICES-FT/23/01.	1	Number



## **SPECIAL TERMS AND CONDITIONS**

1. Offer shall be as per the TPS FACT / FIRE SERVICES - FT/23/01 provided.
2. Pre Bid Meeting Required and shall be conducted one week prior to the bid opening.
3. Pre Qualification criteria is provided and only Pre qualified bids shall be considered for Technical Evaluation.
4. Performance Guarantee and Guarantee required as per the TPS provided.
5. Pre Despatch Inspection is required as per the TPS.
6. Performance Bank Guarantee for 10 % of contract value for a period of 18 months from the date of delivery shall be submitted by the successful Bidder in the Proforma provided as per TPS conditions.
7. Security Deposit: A Security Deposit Bank Guarantee of 5% shall be furnished as per the FACT proforma (applicable for orders of value above Rs. 5,00,000.00) post placement of Purchase Order.
8. As per TPS , after supply of Fire Tender, the Bidder shall provide one week training on operation & maintenance at owner's site & charges for the same shall be included in the quoted price.
9. Payment for Chassis will be made at actuals against documentary evidence, subject to the maximum amount quoted by bidder in the Price Bid on submission of Bank Guarantee of equal Value. Other specified conditions apply.
10. Complete Fire Tenders as per the TPS provided shall be delivered within 6 months from the issuance date of Purchase Order.
11. Fire Tender shall be delivered at Fertilizers and Chemicals Travancore Limited (Govt. of India Undertaking) Udyogamandal Complex, Udyogamandal, Kerala - 683501 as complete unit after completing all the works and with necessary documents required for permanent registration in Kerala without any additional charges.
12. Instruction Manuals, Specification and Drawings shall be submitted as per the TPS condition.

## PRE-QUALIFICATION CRITERIA

**TENDER No. MM/172/G30163 Dated 25-09-2024**

SI No	Pre-Qualification Criteria (PQC) Conditions	Documents to be submitted along with bid	Remarks	Bidders compliance
1	Bidder shall be in the business of manufacturing /fabrication/assembly of Fire Tenders for more than 5 (five) years' ending on the date of NIT	Copy of 'Certificate of Incorporation', NSIC or equivalent Certificate specifying the nature of business of the firm. List of clients to whom Fire Tenders were supplied to be submitted to prove this pre-qualification criteria. The following details are also required: a) Purchase Order No. & date b) Details of Fire Tender c) Name of Organization d) Quantity e) Date of Supply	Relevant documents required	
2	Bidder should have fabricated, supplied and proved performance of <b>minimum one number</b> (1 No) Foam Fire Tender having water pump capacity of <b>at least 4000 LPM</b> at a pressure of 10 Kg/cm square built on <b>minimum 25</b> Ton GVW Chassis during the last 5 years ending on the date of NIT.	2.1 Copy of Purchase Order with technical specifications showing all relevant technical details. 2.2 Performance Certificate from the client to prove satisfactory performance for at least one year of the supplied fire tender against purchase order submitted towards SI No. 2.1	Relevant documents required	
3	The Bidder should have manufacturing/ fabricating / assembling facilities and adequate testing/quality assurance facilities of Fire Tender.	List of machinery, equipments and testing facilities.	Relevant documents required	
4	a) Average annual turnover of the bidder for the last three financial years ending on 31-03-2023 shall be at least Rs. 260 /- Lakhs or above and b) Annual turnover for each year shall be at least Rs. 39 /- lakhs or above during the last three financial years ending on 31-03-2023	Annual report (audited balance sheet and profit & loss account) of the last three financial years ending on 31-03-2023 , duly authenticated by a Chartered Accountant/Cost Accountant in India or equivalent in relevant countries.	Relevant documents required	




Note:-

- 1) FACT shall have liberty to verify the references submitted by the Bidders with users or customers and accept/reject the bids based on the feedback.
- 2) Pre-Qualified bids will only be considered for Technical Evaluation. Technically and Commercially Acceptable Bids will only be considered for Price Bid opening.
- 3) Copies of documents submitted shall be sealed and duly attested by the bidder. Submission of authentic documents for meeting the above technical and financial criteria is the prime responsibility of the bidder. Wherever FACT has concern or apprehension regarding the authenticity/ correctness of any document, FACT reserves the right of getting the documents cross verified from the document issuing authority. In case of ambiguity or incomplete documents, FACT reserves the right to reject the Bidders Bid without assigning any reason.
- 4) IMPORTANT: In case of ambiguity or incomplete or non submission of required relevant documents along with bid, FACT reserves the right, at its option, to reject the Bidders Bid without assigning any reason and without notice.



## TECHNICAL PROCUREMENT SPECIFICATION

### MULTIPURPOSE FIRE TENDER

TPS NO.	FACT / FIRE SERVICES - FT/23/01	
ORIGINATING DEPT	FIRE AND SAFETY, FACT-UC	
CLIENT	THE FERTILISERS AND CHEMICALS TRAVANCORE LTD., UDYOGAMANDAL	
ITEM	MULTIPURPOSE FIRE TENDER	
DESCRIPTION	MULTIPURPOSE FIRE TENDER WITH CAPACITY OF 5000L WATER, 1500L FOAM AND 1000KG DCP	
QTY.	1 No.	
PLANT	FACT - UDYOGAMANDAL COMPLEX	
REVISION	0	
DATE	18.09.2023	
PREPARED -	CHECKED -	APPROVED -
 DM(FS)UC	 AGM(F&S)UC	 DGM(TS)Engg. UC



# TECHNICAL PROCUREMENT SPECIFICATIONS OF FIRE TENDER FOR FACT UDYOGAMANDAL COMPLEX

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**TECHNICAL PROCUREMENT SPECIFICATION OF FIRE TENDER  
FOR FACT UDYOGAMANDAL COMPLEX**

**1.0 INTRODUCTION**

This Technical Procurement Specification (TPS) is for Design, Body Building cum Fabrication and Supply of one no. of Multi-Purpose Fire Tender as specified on a Chassis with equipments, accessories, Electrical items /Tools and Mandatory list of pump and PTO spare parts as per attached **Annexures**. The Fire Tender shall be fabricated with the best material and good workmanship, ensuring effective and efficient operation of the Fire Tender

The Prime mover with chassis for the Multi-Purpose Fire Tender shall be procured by the bidder in the name of M/s **THE FERTILISERS AND CHEMICALS TRAVANCORE LTD, UDYOGAMANDAL COMPLEX**. **The cost of the chassis is to be included in the offer separately.**

All work / activities covered in the TPS including design, procurement of chassis, fabrication, body building, procurement of equipments, fitment, exterior/interior work, supply of accessories, tools, electrical fittings, water pump and PTO spares, inspection and testing, documentation, transportation, supply and delivery of multipurpose fire tender complete in all respects to FACT –Udyogamandal Complex with necessary documents required for permanent registration in Kerala is in the scope of the BIDDER and to be arranged and carried out by the BIDDER at his own cost.

Also any other requirements which are not covered under this TPS, but may be necessary to complete the Fire Tender and/ or to fulfill the operation/performance requirements shall be provided by the BIDDER at his cost, to the full satisfaction of M/s FACT.

Certain items, clauses, stipulations etc. by virtue of their importance may be repeated in the TPS / documents to avoid slippage under any circumstances.

**The vehicle shall conform in all respect of the provisions contained in the M.V. Act 1988 and M.V. Rules 1989, RTO rules etc. applicable in Kerala State, applicable emission norms and to any other statute modifications or re-enactments thereon from time to time**

The Fire tender shall be generally designed, fabricated/manufactured as per the relevant clauses under IS 10460: 1983 reaffirmed in 2000 and OISD 115 and with best material and good workmanship, for ensuring effective and efficient operation of the fire tender.

Other relevant IS Standards, Other Standards and Statutory rules / regulations in India and Kerala State as noted in the TPS / applicable are also to be followed by the BIDDER.

**The BIDDER shall strictly comply to the acceptable makes specified. There shall be no deviation on the specified makes for chassis, water pumps and Power Take Off (PTO) units.**

For other items with makes specified in the TPS, in case the BIDDER requests to include an additional reputed make (s), this shall be taken up by the BIDDER to FACT with full credentials of



the proposed make in accordance with the procedure noted under Clarification/ Deviation requests by the bidder. The decision of FACT shall be final and binding. Subsequent requests in future may not be entertained.

For makes of other items not specified in the TPS, only reputed makes shall be used with the prior approval of FACT. No cost / time implication is permitted in this regard.

Deviations if any from any of the clauses in this Technical Procurement Specification (TPS) / enclosures / codes referred in this Technical Procurement Specification etc. shall be clearly mentioned point wise with reasons for deviations by the BIDDER in the Compliance Statement (Technical) in the enclosed format and to be submitted by the BIDDER along with the bid.

The BIDDER shall also submit along with the bid duly filled in Technical Check list in the enclosed format as reply / confirmation to the Technical queries sought by the client.

However, to avert the possibility of rejection of the offer after opening of bids, it is recommended that the deviations shall be taken up with FACT as noted under SI No 1.1 below so that their Bid is in total compliance to Bidding Document without any deviations.

#### **1.1 Clarification/ Deviation Requests by Bidder**

The details presented in this TPS have been compiled with all reasonable care. However, it is the Bidders responsibility to ensure that the information provided is adequate, clearly understood and it includes all documents.

Bidder shall examine the TPS thoroughly in all respects and if any conflict, discrepancy, error or omission is observed, Bidder may request clarification/ deviation up to 3 days prior to pre bid meeting date or at least fifteen days before the last date of submission of bid in case the bidder is unable to attend the pre bid meeting. Such Clarification / deviation requests shall be directed to the emails/ contact details mentioned in the enquiry.

Response to queries/ clarifications/ deviations raised will be sent as expeditiously as possible in case such clarifications are considered to be given. The response shall not form part of Bidding Document unless issued as an Amendment/ corrigendum. Any modification of the bidding document shall be issued as an Amendment / corrigendum at the discretion of FACT. The decision of FACT shall be final and binding under all circumstances.

Bidders are expected to resolve all their clarifications/ queries to the Bidding Document and submit their Bid in total compliance to Bidding Document without any deviation/ stipulation/clarification

#### **1.2 Conflicts between documents**

In the event of conflict between various documents, the following order of preference shall govern:

- a. Statutory rules / regulations in India and Kerala State applicable.
- b. The clauses in this Technical Procurement specifications

c. Codes and Standards under reference

In case of such conflict between the various documents above, this may be taken up with FACT in accordance with the procedure noted under Clarification/ Deviation requests by the bidder. In all cases, the decision of FACT shall be final.

**2.0 GENERAL REQUIREMENTS:**

2.1 All the equipment and accessories shall be fixed on the appliance in a compact and neat manner and shall be so placed that each part is easily and readily accessible for use and maintenance. The center of gravity shall be kept as low as possible

2.2 **All materials/items shall be BIS marked & where BIS is not available the material shall be of high quality from reputed manufacturer.**

**2.3 Drawing / documents to be submitted along with the offer**

The BIDDER /manufacturer shall provide the following documents / particulars along with BID Documents for examination by FACT:

- a. Chassis Manufacturer's Product catalogue of the offered chassis model with full details (Power @ rpm, torque @ rpm, wheel base, turning circle diameter, braking system, permissible FAW, RAW, GVW etc.)
- b. Load distribution chart, determination of operational FAW, RAW, GVW, and permissible FAW, RAW, GVW etc. of the chassis manufacturer and ensure suitability of the offered chassis for the specified duty.
- c. Relevant Calculations for suitability of PTO for drive line and matching of pumps with PTO and Engine power / torque with sketch (as noted in the TPS).
- d. General assembly drawing showing the location of subassemblies e.g. PTO, Pump, primer and its linkages with main Gear Box, Water Tank, Foam Tank.
- e. Flow diagram of water and foam lines with foam proportionate arrangement –Low and High pressure pump.
- f. Drawings with details of sub frames with metacone mounting for water tank, foam tank and any others to chassis
- g. Details of critical raw materials used in the fabrication of superstructure, components, sub-assemblies and their relevant national standards.
- h. Make, Model and Technical details of bought out items with their catalogues.
- i. Makes of other major items with details
- j. Pump output with performance and characteristics curves.
- k. Details of super structure of the body of fire tender.
- l. Mandatory list of Spare parts for Water pump and PTO spares as per Annexure-3
- m. Un priced bid in the format enclosed indicating Quoted/ Not Quoted along with the Techno commercial bid
- n. Other Recommended Spare parts by the BIDDER for two years' operation (unpriced along with the techno commercial bid and priced separately along with the price bid)



## 2.4 Drawing / documents to be submitted after LOI/ Order

The BIDDER /manufacturer should submit the following documents / drawings after receipt of LOI/Order within 15 days for approval of FACT:

- a. Detailed layout drawing for under structure and super structure indicating all the major components and sizes, specifications, quantity, BOM etc.
- b. Water tank & Foam Tank detailed drawings.
- c. Detailed Flow diagram of water and foam lines and sizes, valves and their specifications with foam proportionate arrangement including Low and High pressure pump.
- d. Electrical circuit drawing indicating major electrical equipments
- e. Full details of super structure of the body of fire tender.
- f. Detailed Quality Assurance plan (QAP) for fire tender in conformity to the specification

### Notes :

- a. Proof of source of supply to be furnished during inspection by FACT.
- b. Only after due approval of drawings / documents by FACT, BIDDER shall start the fabrication Job.
- c. Comments / Approval given by the client (FACT) or their authorised representative on the BIDDER's drawings / documents / procedures/ plans etc. or acceptance/ approvals given by the client at any stage does not relieve the BIDDER of the responsibility to comply with the purchase order conditions.
- d. No extra claim will be entertained for any changes, which may arise during review / approval stage by the client of BIDDER's drawings / documents / procedures.
- e. The completed fire tender shall be not be dispatched or transported until all the stage inspections and final inspection and acceptance tests are successfully completed, submission of necessary documentation and inspection release certificates (IRC) from the purchaser is obtained. Also any statutory tests/ approvals as necessary at the pre dispatch stage is to be obtained by the BIDDER before the fire tender is dispatched.
- f. Details of delivery, transportation etc. are dealt subsequently in the TPS which shall be followed.
- g. Two nos soft and Six Nos hard copies of all documents, instruction manual, all drawings, documents, manuals, inspection reports, certificates, CCE/ PESO approvals and other approvals applicable, shall be submitted along with supply.
- h. Details of documentation / certificates required are deliberated subsequently in the TPS.
- i. Even if the QAP is approved by the client or the inspection and tests are carried out and accepted by the client (or their authorised representative) or inspection is waived during any stage of the order by the client at their discretion, the BIDDER is not absolved to any degree of his responsibilities to ensure that the fire tender supplied comply strictly with the requirements specified in the purchase order.

## 3.0 CHASSIS

- 3.1 The Fire Tender shall be fabricated and built on the **chassis of TATA / Ashok Leyland / Bharat Benz**, which shall be bought by BIDDER only from TATA / Ashok Leyland / Bharat Benz or its

authorized dealer **on behalf of M/s FACT within 30 days of placement of P.O.** The cabin should accommodate 01 driver + 01 Officer + 04 Firemen after fabrication. The requirement shall be as follows:

- Engine : Diesel driven preferably with min 5 forward and 1 reverse speed gearbox.
- Wheel Base : Not Less Than 5500 mm
- GVW : Not less than 25 Ton.
- Turning Circle Diameter : Not more than 25 m
- Road Clearance : Not less than 230 mm
- Overall width : Not more than 2.6 m
- Power : Not less than 170 kW @2200-2500rpm
- Emission Compliance : BS VI minimum or latest compliance as applicable
- Steering : Power Assisted Steering
- Braking system : ABS

- a) The Chassis shall not be older than six months as on date of LOI. The Fire Tender & assemblies/tanks etc. shall be new & of recent manufacture (not older than one year as on date of shipment/inspection of the complete unit, whichever is later).
- b) Make and model of proposed chassis shall be in conformity to the specification requirement.
- c) The fire tender shall be fabricated in a manner such that load distribution confirm to chassis manufacturer's recommendation
- d) The bidder shall choose the chassis with adequate load span so as to accommodate all the facilities mentioned in the specification.

3.2 The chassis shall be supplied with standard tools kit and spare wheel assembly.

3.3 **BIDDER shall arrange necessary temporary registration/permit and insurance till vehicle is delivered at Fertilizers and Chemicals Travancore Limited, Udyogamandal as specified in the order at their risk & cost.**

3.4 The BIDDER shall confirm that the chassis selected is capable of taking the pay load as recommended by the chassis manufacturer and shall be able to meet other duty requirements. Any restrictions on performance of chassis, observed during execution of order due to increase by BIDDER in pay load and other duty parameters shall have to be corrected by BIDDER in consultation with M/s FACT Limited and chassis supplier. Such correction shall be at no extra cost to M/s FACT Limited.

3.5 **The chassis shall be procured by the bidder on behalf of the client. Payment for Chassis will be made at actual against documentary evidence, subject to the maximum amount quoted by BIDDER on submission of bank guarantee of equal value.**



#### 4.0 PUMPING SYSTEM:

##### 4.1 Water Pump

The multipurpose Fire Tender shall be mounted with centrifugal type, **CE marked / UL listed/ complying to EN 1028 standards**, fire water pump with priming system. The pump shall be rear mounted and shall be accessible and readily removable for repairs and maintenance. The fire pump shall be of **Rosenbauer / Godiva / Firefly make only**, and shall be of High-Low Pressure type capable of delivering low pressure output of minimum **4000 LPM @ 10 kg/cm<sup>2</sup>** and a high pressure output of **minimum 250 LPM @ 40 kg/cm<sup>2</sup>** and powered through the Chassis Engine via PTO.

The pump shall be mounted at the rear of the vehicle connected to P.T.O. by propeller shafts.

**The engine and the PTO shall provide sufficient horse power, torque and rpm to enable the pumps to meet and exceed the specified performance.**

The normal (low) pressure pump volute and other castings shall be made from gunmetal / bronze. The normal (low) pressure impeller shall be made of gun metal (bronze) to resist wear accurately machined and balanced. The bearings used in the pump shall be of reputed make.

The High pressure pump body, cover plate and impeller shall be of SS 316/SS 410.

The low pressure and high-pressure impellers shall be mounted on a single shaft in SS 316/SS 410

The pump shaft is to be rigidly supported by rolling element bearings for minimum deflection and end float.

**Operation of low pressure to high pressure or vice-a-versa shall be possible by actuation of single lever (or any other convenient means of manual operation) and shall be easily accessible.**

The pump construction shall be such as to facilitate easy maintenance for removal of impellers, wear rings, sealing devices, pump bearings etc.

The entire pump both suction and discharge passages shall be hydrostatically tested to the requisite pressure as per manufacturer's standards. Necessary Test certificates are to be furnished.

**The pump shall be provided with water seal of self-adjusting mechanical seal type as per pump manufacturer's standard designs. However, it will be designed to withstand rigors of harsh use, dirty water, capable of running dry for long periods without damage etc. Packing glands are not acceptable.**

The pump shall be provided in built Pressure Relief Valve (PRV) which shall operate automatically and shall not allow the high pressure to increase beyond the specified limits set by the pump manufacturer.

The pump shall be provided with an inbuilt filter of easily removable type, which shall filter the water before entering into the high-pressure stage impeller.

The pump shaft shall be sealed with oil seals to prevent road dirt and water out of the bearing housing. The bearing housing shall be of sufficient size and rigidity to withstand the torque of the engine during firefighting operations.

The discharge of the pump will be routed to the outlets for hand lines and monitor fitted on the top.

Suitable draining provisions shall be provided at the bottom of casing. A provision for easy lubrication should also be provided.

Operating manuals of the pump shall be supplied.

**Primer:** The complete priming assembly shall be of the pump manufacturer (OEM) only. The priming system shall be of reciprocating / exhaust ejector / water-ring type. The primer should be capable of lifting water **at least from a depth of 7.0 m at a rate of not less than 30 cm per second.**

**The operation of primer shall be manual type.**

The pump shall be of rigid construction & modularly designed for ease of maintenance. It shall be capable of delivering its full performance with all strainers (external & internal).

#### 4.1.1 **Mandatory list of Water Pump and PTO Spare parts (Ref Annexure 3):**

The mandatory list of spare parts for Water pumps (including primer) and PTO (Power take off unit as deliberated in subsequent paragraph) shall include the listed Spare parts as enclosed in Annexure 3.

**The prices of mandatory spares for water pumps (including primer) and PTO shall be considered for evaluation.**

Bidder may include other spare parts also under the list of other recommended spare parts list (excluding mandatory list of spare parts specified above) **for two years' normal operation** which shall be included under separate head by the BIDDER and **will not be considered for evaluation and purchaser shall have the discretion to procure to the extent required.**

#### 4.2 **Suction Inlet:**

A suction inlet shall be provided for suction operations from outside sources. The gunmetal suction inlet with not less than 100 mm suction hose coupling **as per IS 902** in Gun Metal (LTB Gr.2 of IS 318) with internal strainer and gunmetal blank cap fastened with chain. The strainer shall be retained firmly when in use but shall be readily removable. The suction connection from water tank to pump will be sized to allow full pumping at rated output. A butterfly valve shall be fitted between pump suction inlet & water tank. The valve shall be of **Audco / L&T / KSB only.**



#### 4.3 Discharge Outlets:

There shall be min. 4 x 63mm delivery outlets at front with **stainless steel Audco / L&T / KSB make ball valves** fitted with female instantaneous couplings as per IS 903 in Gun Metal (LTB Gr.2 of IS 318). These will be provided for operating the pump via hand lines connected directly to the pump.

#### 4.4 Monitor outlet:

One connection shall be taken from the manifold to the monitor discharge outlet. This will have a suitable sized flanged connection with the manifold. A suitable butterfly valve will be fitted at the starting point of the water flow to the monitor. A second valve will be provided at a suitable place near the base of the monitor to ensure failsafe operations.

#### 4.5 Mounting:

The pump shall be rear mounted to ensure max. hydraulic efficiency. It will be mounted in such a way that vibrations from the drive line (if any) are not transmitted to the control panel. It will have at least four mounting points to ensure even distribution of complete load. The mounting will be done on heavy 'C' channel/plates only & secured to the chassis members by bolting. Welding will be strictly avoided. The rotating drive flange will be provided with a cover/guard so that injury is minimized during operation or maintenance of the pump. The guard will be bolted & easily removable.

#### 4.6 Pump Control Panel:

The pump control / operation panel will be designed keeping in mind ease of operation & maintenance. The system will be of open architecture type & ensure that both scheduled operation as well as preventive maintenance is affected easily. It will be ergonomically designed to ensure that all controls come to hand easily & intuitively. All valves shall be of lever-operated type and shall be made of SS with Teflon seats. **The entire area will be covered by roller shutter of Fireco / MCD make.** An operating instruction plate and flushing out instruction plate shall be displayed at the prominent location. The complete control panel assembly will be from the manufacturer only & with the following:

- |                                             |                                            |
|---------------------------------------------|--------------------------------------------|
| 1 Pump to delivery outlet                   | 10 Water level indicator - Bar Type        |
| 2 Pump to monitor                           | 11 Foam level indicator - Bar Type         |
| 3 Pump to tank filling                      | 12 Pump and engine RPM meter               |
| 4 Foam proportionating system               | 13 Pump engaged indicator                  |
| 5 Pump to cooling line                      | 14 Engine temperature meter                |
| 6 Tank to pump suction                      | 15 PTO temperature meter                   |
| 7 Foam tank to pump                         | 16 Hours run Meter                         |
| 8 Outside source to pump suction            | 17 Provision of light point for pump panel |
| 9 Auxiliary throttle control for the engine | 18 Cooling water circuit control           |

In addition to the items mentioned above, any other items that may be essential will also be provided. Any of these items, which are also required in the driver's cabin, will be provided at

suitable locations in the driver's cabin.

## 5.0 POWER TAKE OFF UNIT (PTO):

The power takes off unit for water pump shall be of make **FIREFLY / VAS / SYALL / WEBSTER / MARTIN HARPER only**. The power take off unit of suitable gear ratio to match the engine & pump characteristics shall be provided. PTO shall be operated pneumatically with push button/lever in crew cabin. The drive assembly components (shaft, couplings etc.) shall be dynamically balanced and vibration of any parts should be minimum. **Necessary support for PTO Unit, Propeller Shaft, Couplings, and Universal Joints etc. shall be provided. A suitable cooling system (copper coil) shall be inbuilt in the PTO to cool the oil.** The details of the PTO such as its make, name of the manufacturer etc, supported with catalogue/ drawing shall be submitted along with the offer. **The BIDDER shall submit a sketch showing the arrangement of PTO Unit for taking power from main engine on chassis to water pump.**

## 6.0 COOLING SYSTEM

In addition to the radiator cooling, an indirect cooling system of the open circuit type will 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 will be of heat exchanger type with copper coils. The cooling system would 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 will be prevented from overheating & the pump characteristics will be chosen in a manner so that the engine does not run at its max. speed for the required output.

**Suitable gauge for cooling water & glow lamp for lubricating system shall be provided in the driver's cab. This will be marked with operating temperature.**

The cooling water outlet pipe from PTO & additional cooling system shall be connected through a suitable dia pipe. The end of the pipe shall terminate in a threaded connector.

A flexible pipe, at least 8 Mtrs. long will be provided as spare, so that waste-cooling water can be discharged away from vehicle. The pipe will have threaded end connectors.

## 7.0 WATER TANK

7.1 The Water tank will be of **min. 5000 L capacity** & shall be suitably mounted on the chassis in such a way that the weight distribution is optimized. Tank should be rectangular in shape. In addition, a 2% expansion space will be made in the tank over & above the water capacity. **The tank shall be fabricated out of Stainless Steel grade 304/316 sheet min. 5mm thickness for bottom, and 4 mm for sides & tops. The baffles shall be of minimum 4mm thickness.** Welding shall be done using TIG welding only. The tank should have adequate SS angle reinforcement.

The tank will be of welded construction & will die-pressed on all sides to prevent distortion & to



ensure torsional rigidity. Due care would be taken to ensure that butt-weld joints are minimized. Wherever butt joints are unavoidable, they will be radio graphically tested. The test films & reports will be submitted at the time of stage inspection. All other joints will be DP tested for soundness of weld joints.

## 7.2 Baffles:

The tank shall be suitably baffled to prevent surge when the vehicle is cornering or braking. The baffle plates will be of min. 4 mm thickness **SS 304/316 plate** & will be bolted type. **The fasteners used will be of SS material only so that they do not freeze due to rusting.** The nuts will be tack welded to the baffle plates. The baffles would be so designed that they do not distort / buckle under any circumstances during braking & cornering.

## 7.3 Connections for Filling:

The tanks have a filling orifice of 200 mm and an inspection & maintenance manhole of 450 mm at the top. The cover for the filling orifice will be of hinged or threaded type as per the manufacturer's standard design & will be clearly marked with the words (either etched or raised) 'WATER'. This port will be used for filling the water tank from overhead storage tanks.

Apart from the above, four more filling connections will be provided on the sides of the tank (two on each side) terminating in filling connections of 63 mm male inst. couplings made of GM or SS material incorporated with a strainer and a blank cap.

The header and the line will be suitably designed to ensure that the inflow of the water into the tank is sufficient to maintain the output of pump while the tank is being replenished from other vehicles or from hydrant lines. These connections will be fitted with a valve to prevent water leaking through the filling pipe & will be provided as close to the pump as possible. The valve may be of NRV/Ball/ Butterfly type.

One connection will also be provided for filling the tank from the pump itself. The connection will be taken from the pump manifold & will be controlled by a shut-off ball / butterfly valve.

## 7.4 Draining, Cleaning & Repairs:

The Tank will be fitted with sludge trap with a cleaning hole of 250 mm will be provided at the bottom of the tank. The bottom of the tank will have a slight slope towards the sludge trap. The cleaning hole shall be provided with a 50 mm dia. drain line **with a ball/butterfly valve** terminating at the side of vehicle for easy access. Suitable lifting lugs will be provided on the shell of the tank to enable it to be lifted off the vehicle for repairs/replacement as necessary.

## 7.5 Overflow:

One overflow pipe of suitable dia. will be fitted to the tank. The dia. of the overflow pipe will be determined as per the filling connections provided. However, it will not be less than 100mm dia. in any case to ensure the tank does not get pressurized. The discharge end shall be taken below the chassis without reducing the effective ground clearance.

## 7.6 Miscellaneous:

The tank will be connected to the pump with a butterfly valve for ease of operation. The tank will be hydraulically tested at **0.5 Kg/cm<sup>2</sup> 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 you as per your 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 will have an adequately strong deflector plate, which will avoid the incoming jet of water from hitting the tank side/roof. All plumbing will be reasonably accessible for maintenance purposes. Screwed bends, joints will be avoided as far as possible. All the joints will be flanged type & will have O ring sealing. Rubber gaskets will not be used anywhere in the plumbing. All the outlets and inlets from the tank will be taken by installing nozzles of suitable length and with reinforcement pads.

## 8.0 FOAM TANK

8.1 The Foam tank shall be of **min. 1500 L** capacity & will be suitably mounted on the chassis in such a way that the weight distribution is optimized. In addition, a 2% expansion space will be made in the tank over & above the water capacity. Tank should be rectangular in shape.

The tank will be fabricated out of **SS 316 plates of min. 5mm thick all around except the top plates, which will be of 4mm.**

The tank will be of welded construction & will die-pressed on all sides to prevent distortion & to ensure torsional rigidity. Due care would be taken to ensure that butt-weld joints are minimized. Wherever butt joints are unavoidable, they will be radio graphically tested.

The test films & reports will be submitted at the time of stage inspection. All other joints will be DP tested for soundness of weld joints. Complete welding will be done using only Argon Gas aided (**GTAW**) process using only **SS316** compatible electrodes.

## 8.2 Baffles:

The tank will be suitably baffled to prevent surge when the vehicle is cornering or braking. The baffle plates will be of min. **4 mm thickness SS 316 plate & will be bolted type. The fasteners used will be of SS** material only so that they do not freeze due to rusting. The nuts will be tack welded to the baffle plates. The baffles would be so designed that they do not distort / buckle under any circumstances during braking & cornering.

## 8.3 Construction:

The sides of the tank would be die-pressed to give additional strength & stiffness so that it does not distort due to chassis flexion. The welding of the tank will be done using inert gas (argon) welding only to ensure a controlled & clean weld joint. The tank will be constructed in such a way that it is easy to clean from inside.

## 8.4 Connections for Filling:

The tank will be provided with a filling orifice of 150 mm and an inspection & maintenance



manhole of 450 mm on the top of the tank. The cover for the filling orifice may be of the hinged type or threaded type as per the manufacturer's standard design & will be clearly marked (either etched or raised) 'Foam'. This filling orifice will be used to fill the foam tank from overhead storage tanks and shall have a removable funneling arrangement.

Apart from this one more filling pipe will be provided which will be of approximate 63mm dia & connected to the Foam tank from the side. The pipe will be so sized that filling from outside sources is possible & that the foam inflow can be maintained while the pump is discharging at its rated output & while foam is being replenished from other vehicles. The lines will be fitted with a suitable coupling made of GM or SS & incorporated with strainer and a blank cap. This connection will be fitted with a ball valve to prevent foam leaking through the filling pipe. The filling inlet will be provided as close to the tank as possible.

#### 8.5 Draining & Cleaning:

The Tank will be fitted with sludge trap with a cleaning hole **of 250 mm dia**. The cleaning hole shall be provided with a 50 mm dia. drain line **with a ball valve** terminating at the side of vehicle for easy access.

The bottom of the tank will have a slight slope towards the sludge trap. The connection will be taken down to a point well below the chassis without reducing the effective clearance. The connection will ensure that the foam is easy to collect in barrels placed on the ground through a flexible pipe. Suitable flexible pipe with adequate connection fittings shall also be provided.

The tank will be constructed in such a way that it is easy to clean from the inside. In case it is not physically possible to get into the tank due to its dimensions, it will be possible to clean the tank from the outside through the cleaning hole provided at the top of the tank.

#### 8.6 Miscellaneous:

The tank will be connected to the Pumping system **with a ball valve**. The Foam tank will be hydraulically tested **at 0.5 kg/cm<sup>2</sup> pressure** to find out if there are any leakages. During this test, the tank will show no signs of leakages. This test may be carried out in the presence of the inspecting officers or done by us as per our 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.

Internal test certificate shall be furnished along with all the other documents at the time of delivery of the vehicle. All piping shall be reasonably accessible for maintenance purposes. All piping shall be reasonably accessible for maintenance purposes. Screwed bends, joints shall be avoided as far as possible. All the joints shall be of flanged type.

All the outlets & inlets from the tank will be taken by installing nozzles of SS 316 of suitable length & will have suitable reinforcement pads of SS316.

#### 9.0 Electronic Level Indicators for Water Tank & Foam Tank:

**Electronic Water and Foam Level Indicators indicating the tank levels as (minimum) EMPTY, ¼, ½, ¾ and FULL shall be provided on the pump control panel.** 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. **Graduated glass / pyrex tube indicators shall be provided as standby.**

#### **10.0 Tank Mounting:**

The water tank and Foam tank shall be mounted on the vehicle on a sub frame. **This sub frame shall be made from Hot Dip Galvanized MS 4" section and shall be bolted with the chassis using the high tensile bolts.** The tank shall be mounted on the vehicle using Metacone mountings/ flexible mounting pads (depending on the manufacturer's standard mounting procedures) which will prevent distortion due to chassis flexion.

**The bidder shall provide the full technical load details and suitability of the Metacone mountings based on the tank load. The bidder shall provide drawing of the sub frame and Metacone mounting along with the bid.**

Suitable eyes bolts shall be provided on the shell of the tank to enable it to be lifted off the vehicle for repair /replacement as necessary. **The bottom of the hooks will be suitably reinforced with pads to avoid stress on the tank top plate.**

**The mounting shall permit the full contents of tank to flow into the pump. The bottom of the tank will be slightly sloped towards the tank to pump connection.** Sides of tank would be die-pressed to give additional strength & stiffness so that it does not distort due to chassis flexion.

#### **11.0 Automatic Foam Proportioning System:**

An automatic around the pump Foam Proportioning system with **a selector valve to induce 3 to 6% of foam compound** will be provided. The proportioner will be installed in such a way that it will not be liable to mechanical or other failures. The linkages of this purpose will be as simple as possible to avoid distortion due to chassis flexion. It will be reliable & will not require frequent calibration checks.

The selector valve should have variable setting between ON & OFF positions. It shall be calibrated for hose & monitor operation and combination operation. Make, model and literature of foam proportioner to be submitted with offer.

Auxiliary Connection: Auxiliary connection for foam pickup tube with strainers shall be provided to enable the foam compound to be induced into the pump directly from the drums or outside source. 3 m pick up tube with 600 mm length SS 316 dip pipe & strainer shall also be provided for this purpose.

#### **12.0 WATER CUM FOAM MONITOR**

The water cum monitor shall be Akron / Protek / Elkhart Brass brand with discharge capacity of min 2500 lpm and shall have a Jet/spray type nozzle. The material shall be Stainless Steel / Gunmetal. The monitor shall have an effective waterway if 75 mm and It shall have minimum horizontal throw of 60 Meters for water 50 Meters for foam. The monitor shall be capable of 360 deg horizontal movement and min. 135 deg vertical movement.



The entire assembly shall be hydraulically tested to a pressure of 2.3 N/mm<sup>2</sup> as per SI No 10.1 and 10.2 of IS 8442-2008 for ensuring conformity to the leakage test. After the above test is carried out, the performance test as given above shall be performed and assembly shall meet the requirements specified. The water cum foam monitor will be provided at a suitable location on the top of the vehicle.

Note: Manufacturer's catalogue of the offered model of the monitor along with the MOC, performance, dimensions etc. shall be provided along with the bid.

### 13.0 WATER HOSE REEL

Two high-pressure hose reels to facilitate operation of the high-pressure section of the Fire Pump shall be provided and mounted on either side so as to be accessible for use from either side of the appliance. The hose shall be prevented from kink. **Working pressure of hose shall not be less than 50 Kg/cm<sup>2</sup>.** The high-pressure hose reel shall hold 60 meter of hose in one length, terminating in a reputed make high-pressure Jet and fog type gun with a minimum range of 25m. Provision shall be provided to properly fix the gun while not in use. Plumbing between the pump and hose reel shall have clean and unobstructed water way of not less than 20 mm throughout without any restriction. It shall have geared winding system.

### 14.0 DRY CHEMICAL POWDER SYSTEM (1000 Kg):

#### 14.1 DCP Vessel

The DCP storage vessels shall be spherical /cylindrical in shape and be designed to 1000 Kgs Water Capacity. It shall be designed to hold Dry Chemical Powder as per IS 4308 / IS 14609. Design, fabrication, inspection, testing etc. of the DCP storage vessels shall confirm to ASME Sec VIII Div. I of unfired pressure vessel. Suitable anti-corrosion treatment shall be given to the internal surface of the vessels with Lead-Tin alloy lining.

Vessel shall be so sized so as to have 10% as free space after filling the specified quantity of powder. Vessel shall have supports adequately designed, which shall also ensure that the loaded vessel weight is uniformly distributed on the chassis. The vessel shall be fitted with one manhole and appropriate cover on the vessel top. Vessel shall be fitted with safety valve, pressure gauge, pressure reducing device, isolation valve, charging valve fitted at suitable location. Vessel should be provided with a blow valve/safety valve or similar device on top to discharge N<sub>2</sub> gas in the cylinder without discharging powder. Manual tank pressure vent should be provided.

The operating & design parameters of DCP Vessel shall be as below:

Operating pressure, Kg/cm <sup>2</sup>	: 14.0
Hydro test pressure, Kg/cm <sup>2</sup>	: 35.0
Temperature, deg °C	: 25.0-75.0
Corrosion Allowance	: 2 mm
DCP filling Orifice	: 150 mm
Inspection & maintenance manhole	: 450 mm
Drain with flanged cover (at the bottom)	: 150 mm

Vendor shall submit the design calculations for the DCP vessel along with his bid indicating material specifications, design pressure, test pressure, radiographic requirements, adopted thickness for shell and dished end, nozzles & piping etc.

Hydro-test certificate for DCP vessel and test certificate for pressure relief valve shall be submitted during delivery.

#### 14.2 **DCP**

The vessel shall be filled with ABC type (90% Mono Ammonium Phosphate based) dry chemical powder. The powder shall be as per IS 4308:2019 or latest.

#### 14.3 **Piping**

All the piping shall be of SS of minimum schedule 40. All the valves to be used shall be of adequate pressure ratings. All piping shall be sized so as to have minimum pressure drop & achieve required pressure & flow. All piping shall be designed for 10% over the maximum pressures encountered in the pipe. The piping shall be flanged as far as possible for ease of maintenance. All lines shall be hydraulically tested to 1.5 times the design pressure for 2 hours. However, in no case shall the lines be hydraulically tested below 25 bar.

#### 14.4 **Expellant Media**

Nitrogen gas shall be used as expelling media for discharging the dry chemical powder through both the hose reels at same time or from any one hose reel. Nitrogen cylinders of 150 bar rating (however nitrogen cylinder pressure of 140 bars should be considered for hydraulic calculation and nitrogen cylinder requirement) to achieve the required pressure (15 kg/cm<sup>2</sup>), flow and discharge of minimum 95% of Dry Chemical Powder within the required time. Adequate number of nitrogen expellant cylinders including **100% spare** cylinders shall be installed.

A suitable connection shall be provided to fill up the empty N2 cylinder directly without having to remove the N2 cylinder from the vehicle. An alternate independent connection from the expellant gas manifold shall be provided for flushing the monitor, hose reel & manifold with expellant gas after use. A separate connection shall also be provided to flush the powder lines using air from outside sources.

A suitable portable pressure measuring device (with pressure releasing facility), shall be supplied with the fire tender.

A hydraulic calculation for nitrogen capacity requirement meeting our performance requirement shall be submitted with offer for evaluation.

A Test certificate for all the nitrogen cylinders issued by Chief Controller of Explosives, Nagpur should be submitted by the fabricator at the time of delivery.

#### 14.5 **DCP Hose Reels**

Two hose reels each with min 19 mm x 40-meter tubing shall be provided preferably on either side of the vessel at easily accessible location for quick withdrawal. Swiveling guide rollers shall be fitted wherever necessary to prevent tubing from kinking. Each hose reel shall be capable of



discharging DCP @ 2.5 kg/sec through a Light Alloy Trigger type nozzle connected to the end of reel. The throw shall not be less than 10 m while working with both the hose reels. It shall have geared winding system.

#### 14.6 DCP Monitor

A DCP monitor being fed from the DCP Vessels shall be mounted on top of the vehicle. The monitor shall be of reputed make and have a selectable discharge rate of 15, 30 and 40 Kg/Second at operating pressure. The throw through the monitor shall not be less than 40 m horizontally in still air (with full discharge). Flow Control Lever shall be provided for the operator to regulate the discharge of the powder. It shall be capable to work on any angle up to 360° horizontally and +90° vertically. The monitor shall be provided with a resting stand for the front part while the monitor is not in use. Blank rubber cap to be provided at monitor outlet to avoid water ingress.

#### 14.7 Control Panel

An adequately illuminated control panel shall be provided at easily accessible position to operate the dry powder system. The control panel shall include the following:

- Pressure Gauge for expellant gas cylinders at manifold.
- Pressure Gauge to indicate pressure of DCP vessel in charged condition.
- Various Valves with name plates.
- System schematic etched on brass plate.
- Operating instruction plate and flushing out instruction (both etched on brass plate).

#### 14.8 Spares for DCP system

The spare parts list shall be furnished along with the offer of Fire Tender (Unpriced along with the techno commercial bid and priced separately along with the price bid). **The price for spares will not be considered for evaluation; however, FACT shall have the discretion to procure or not and also to the extent required).** The spares shall consist of -

- 02 numbers of spares for metal parts (such as selector switch, pressure regulator, safety valve, manifold, coupling, pneumatic discharge valves with actuators, monitor unions, plug nuts, bends, discharge valve, pressure gauges, nitrogen cylinder pressure measuring device, hose reel nozzle etc).
- 02 numbers of spares of flexible hoses of each size/type (such as cylinder to manifold, manifold to DCP vessel etc.).
- Any other spare parts recommended for two years' normal operation of the DCP system.

#### 15.0 PIPING & VALVES

Total pipeline circuit on the vehicle including water lines & fittings will be of SS 316 / SS 304 material only. All valves will be of Audco / L&T / KSB make only. Valves up to 2" size will be lever operated SS 304/SS316 ball valves & all valves above 2" size will be normal ball/butterfly valves but made of SS 304/SS316. The ball valves will be of three-piece design to ensure that maintenance & repairs are easy. The seats of the valves will be easily replaceable. All socket welded lines will be DP tested and butt welded joints will be radio graphically tested. All the lines

lines will be tested hydraulically for at least 3 times the working pressure or 1.5 times the working pressure of the pump.

The piping should be flanged for ease of maintenance. However, flange joints kept minimum. All bolting should be of SS-316 or cast equivalent

**A flow chart and schematic diagram will be made and submitted with the technical bid.**

#### 16.0 BODY WORK

16.1 Furnished accommodation for driver, officer in charge & four fire men would be provided in the cabin. This will be done by suitably extending the original cabin. The design shall be approved by FACT before commencing fabrication work on chassis. First aid box shall be provided and fitted in the cabin at suitable location for 8 persons & contents as per The Factories Act.

16.2 **Cabin Extension:** The original cabin of chassis manufacturer may be extended to accommodate driver, officer in charge & four fire men and shall be strictly as per guidelines of chassis manufacturer. The complete cabin shall be duly treated for corrosion by two pack epoxy treatment. In case it is not possible to do the extension, a separate cabin shall be built at the rear of the original cabin with a communication window between the two cabins. In this case the structure and paneling work shall be done strictly as per the guidelines for the rear superstructure mentioned below. The cabin should have four doors (2 each side). The door shall open outwards. Cabin doors shall be provided with splinter proof safety glasses and shall also be provided with roll down mechanism. All the doors shall have chassis OEM handles same as from original cabin.

16.3 **Interiors of the cabin:** The cabin shall be internally lined with a good quality PVC coated aluminum sheets. Alternatively, other systems of Interiors shall be accepted provided the same is on par with the latest trends in the international markets & as per the newer norms. However due care must be taken that the design/fabrication is of the highest order and in no case shall it compromise on the function and aesthetics of the modern day interiors of cabins. The entire floor of the crew cabin shall be provided with good quality anti-skid type vinyl matting. Cabin shall have two roof light of OEM make. Two numbers of large sun visors shall also be provided shall be provided on each side. Grab bar to be provided in center of cabin for rear seat users. Non-slip type steps and rails near all doors shall be provided to assist the crew members to get in and out. Additionally, front wheels shall be fitted with step on rings. The crew cabin structure shall be so designed so as to avoid any vibration/rattling/deformation in the intended usage of vehicle.

16.4 **Structure and Paneling:** The entire structure of appliance including that of driver's cabin shall be welded structure made from anticorrosion treated made of min 2mm x 1.5" x 1.5" MS pressed section and channels structural steel (IS 2062). The cross members and supported channels should be zinc electroplated 50 microns for the channels and 20 microns for supports. The outer paneling of the cabin shall be in line with the chassis manufacturer's recommendations. The paneling of the rear super structure shall be done from 2.5 mm aluminum sheets & the internal paneling shall be done from 2 mm aluminium sheets / chequered plates. The top of floor / deck



shall be provided with 3 mm thick aluminum chequered plates. Grab rails on top of the vehicle over entire length on both sides shall be provided. The vehicle shall have rainwater channel on both sides. The openings for equipments shall be sealed properly to ensure no water goes inside. Lockers, roof joints shall be sealed properly to avoid water ingress and corrosion. The sheets of outer panels shall NOT be bolted/screwed to framework.

- 16.5 **Seating:** The driver & officer seat shall be provided by chassis OEM. The crew shall have individual seating, with each seat fitted with brackets for placement of Breathing Apparatus in an upright position. The seats shall be of the wear & walk away type so that when the crew disembarks from the vehicle the BA sets should easily come off the seats with them. The seat bottom will be theater type, which will automatically flip up when the fireman gets up, thereby freeing up the space for easy embarking & disembarking. The seats shall have integrated seat springs to isolate shock while in motion. The seat shall accommodate all types of SCBA. The seats shall have right shoulder seat belt release and a chrome swivel bezel. The seats shall be of HO Bostrom or Seats Inc. Verification of documents (as required) shall be done at the time of stage inspections. Provision shall be made to store two no. BA sets in the back rest of the driver, officer

- 16.6 **Lockers:** All the compartments lockers for stowage of equipment shall be covered with **MCD France or Fireco** make Aluminum Roller Shutters. These smooth operating shutters shall be made of extruded aluminum profiles duly powder coated. **3 set of spares for the complete handle and lock assembly** shall be provided with the fire tender. Roller shutters shall have locking arrangements to prevent accidental opening during movement of vehicle.

Size and number of lockers shall be designed such that on either side minimum 6 nos of 15m length fire hoses and 2 nos of 30 m length fire hoses can be easily accommodated in single layer and other equipments may be accommodated in maximum two layers. Sufficient nos. of lockers shall be provided for storage of all accessories listed in Annexures and for other equipments which are necessary for Foam Tender but not given in Annexures. Additionally, lockers shall also be provided to accommodate 8 nos DCP Extinguishers of 9 Kg capacity in upright position.

If needed, lockers may be provided with drawers as per the latest international standards giving easy access to the equipments. Drawers shall have self-locking system to prevent accidental opening while the vehicle is motion.

All the space on sides of the vehicle, below the chassis frame level shall be utilized for stowing equipments. If required, lower lockers shall be provided with flap type doors opening downwards. Heavy duty chain and hinges shall be provided on these doors so that these doors can be used as steps for access to upper lockers. Adequate grab handles shall be provided in upper lockers at convenient height for easy access.

All the lockers shall be fitted with internal lighting, which shall be capable of being automatically switched **"ON"** and **"OFF"** by the opening of shutters. All lockers shall have arrangements for self-draining of any water entering inside. All the lockers shall be provided

with 4 mm thick, vulcanized synthetic rubber mat at bottom and up to 12 inches on three sides. Location of equipment (labels) will be provided on lockers for immediate identification.

- 16.7 **Stowage of equipments:** Arrangement shall be provided for secure, scientific and systematic stowage of all accessories within the fire tender. Each equipment shall have its designated location so that it can be easily located during emergency situations. Suitable clamps, brackets, holders etc. shall be provided for major accessories as per the requirement. The branches / nozzles shall be stored on a pull out drawer system fixed with instantaneous single lug female coupling. The accessories should be properly clamped / strapped / Brackets / holders / coupling to prevent shifting of the equipment while the vehicle is in motion and thereby avoiding damage to the paneling of the vehicle. Suitable arrangement / bracket for four nos of 2.5 meter length suction hoses shall be provided at the roof of Fire Tender.
- 16.8 **Other Works:** The driver shall be provided with large size rear view mirrors on both sides of the cab and sufficient blind spot mirrors at suitable locations shall be fixed. Air-conditioning provided by the chassis manufacturer shall be suitably extended by the vendor for the complete cabin. Roof panels shall be made of aluminium padded plates. The roof should be strong enough for being walked-on and must be sufficiently supported. The intermediate walls and shelves shall be constructed from aluminium sheets paneled to the structure without any welding work. Complete flooring shall be of 3 mm and the inside of lockers shall be done from 2 mm Aluminium Plain Sheet.

**No part of the bodywork should reduce the ground clearance to less than 36 cm or increase the overall width more than 2.6 m. The highest part of the appliance with the ladder and monitor mounted on it should not exceed 3.6 m from ground level. The construction of superstructure should not reduce the angles of approach and departure below 30°.**

**All steel screws, bolts, studs, nuts, rivets etc. shall be zinc coated or shall have rust proof coats by a recognized process. Self-fastening bolts shall be strictly avoided.**

## 17.0 ELECTRICAL SYSTEM

All wiring shall be properly fixed in position & shall be protected against heat, oil & physical injury. To the extent possible all wiring shall pass through conduits. The wires used in the vehicle shall be stranded copper or copper alloy conductors of a gauge rated to carry **at least** 125% of the max. current for which the circuit is protected. Voltage drops in all wiring from the power source to the using device shall not exceed 10%. The use of star washers for circuit ground connections shall not be permitted.

All the electrical circuits will have their own separate fuses, suitably marked & grouped in a common fuse box, located in an easily accessible position. Provision shall be made for min. 4 spare fuses in the box which will be provided in driver's cabin. All the controls for electrical system shall be provided near the driver's seat. The battery shall be placed in a totally enclosed box. Radio suppression of the electrical system, which is sufficient to ensure positive operation of radio equipment without interference, would be provided. Provision shall be made on



dashboard for installation of VHF set with separate power supply. Supply of VHF set is not the scope of vendor.

All equipment's lockers shall have individual lights and these will be operated by means of a master switch on the dash board in the driver's cabin. The switch of the siren will be provided on the left corner of the dash board (Near front left side). Two fog lamps will be suitably attached to the front bumper of the appliance.

A rear view camera with visual display in the crew cabin shall be provided for aiding reversing of the vehicle. Reverse lights with on-off buzzer, on either side will be fixed suitably at the rear of the appliance with wire mesh in such a manner to prevent accidental damage by the firemen while mounting the tank top. The light bar with integrated PA system on top of the cabin shall be suitably protected with grills/mesh to avoid damage from hitting low lying obstructions.

Fabricator shall ensure that the power distribution is sufficient for all electrical equipments / devices to be used at a time. Extra battery backup may be provided if required.

The switches used near pump control panel shall be good quality and arrangement shall be done to prevent water ingress to the electric panel. The electrical fittings as per Annexure-2 shall be provided on the appliance at suitable locations.

#### **18.0 LADDER & LADDER GALLOWS**

Ladder gallows will be provided for **carrying Firescape / King 35 feet Truss Type Aluminum Double Extension ladder as per JCDD/10 standards.**

Ladder gallows of roller type shall be provided on the roof of the vehicle for easy placing/removal of 10.5m aluminium extension ladder. There shall be suitable gallows fitted with rollers and designed to facilitate easy & quick removal of the ladder by one man from the rear of the appliance. Means shall be provided for locking the ladder when stowed.

#### **19.0 WORKMANSHIP & FINISH**

**The gross vehicle weight of the Fire Tender with all equipments, consumable & crew should be approximately below 85% of permissible axle load of chassis manufacturer's specification. The weight distribution diagram, equipment layout shall be submitted along with the offer.**

General appearance of the vehicle shall not show any evidence of poor workmanship. The following shall be reason for rejection

1. Rough, sharp or unfinished edges, burrs, seam, sharp corners, joints, cracks and dents noticed in the vehicle.
2. Non uniform panels, Edges those are not filleted, beveled etc.
3. Paint runs sags, orange peel, etc. and any other imperfection or lack of complete coverage.
4. Misalignment of body fasteners, glasses, viewing panels or light housings, etc.
5. Improper body design or interface with chassis that could cause injury during normal use.
6. Improperly fabricated and routed wiring or harnesses.

7. Improperly supported or secured hoses, wires, wiring harnesses, mechanical controls.
8. Loose, vibrating, abrading body parts, components, subassemblies, hoses, wiring harness or trim.
9. Noise, panel vibrations etc.
10. Sagging, non-form fitting upholstery or padding.
11. Incomplete or incorrect application of rust proofing.
12. Inappropriate or incorrect use of hardware, fasteners, components or methods of construction.
13. Incomplete or improper welding, riveting.
14. Unsealed appurtenances or other body components, gaskets, etc.

In addition, any deviation from specification requirements or any other item, whether or not stipulated herein, that affects form, fit function, durability, reliability, safety, performance or appearance shall be cause for rejection. Defective components shall not be furnished. **Parts, equipment and assemblies which have been repaired or modified to overcome deficiencies shall not be furnished without the approval of FACT Ltd. Welded, bolted and riveted construction utilized shall be in accordance with the highest standards of industry. Component parts and units shall be manufactured to definite standard dimensions with proper fits, clearances and uniformity.**

## 20.0 PAINTING & MARKING:

20.1 **Marking:** - The Vehicle will be clearly and permanently marked with the following, preferably on a metal plate attached in the driver's cabin & also near the pump operating control panel.

- Manufacturer's Name & Trademark
- Year of Manufacture
- Capacity of Pump in LPM
- Capacity of Water, Foam and Diesel Tank in Liters
- Engine & Chassis Nos.
- Vehicle operating instructions in cabin.
- Pump & PTO operating instructions at rear.
- Flow Diagram for Water-Foam Piping
- DCP operating and flushing instructions at DCP panel.
- Flow diagram for DCP system
- Capacity of Vessel & other relevant details

20.2 External body of the appliance shall be painted with **PU paint** of **3M / Dupont / ESDEE / AKZO**, fire red colour (shade no. 536 of BIS 5-1978) and paint conforming to BIS 2932-1974 and thickness of 0.12 to 0.2 mm using double coat spray painting on outside. Application - PU putty, PU primer, PU Surfacer, Under Coating and final paint. (All ingredients in PU base only.) This paint shall be life of min. 10 years. The bidder will guarantee fade resistance of min. 5 years from date of supply even if the vehicle are kept in the open.



Necessary anti-corrosion and priming coat shall be applied before painting in order to achieve gloss finish.

Under frame of Chassis as well as the body will be painted with epoxy paint. The chassis frame will be painted black. Structural members shall be treated with phosphate chemical (Rust Remover) and after fabrication, structure shall be painted with epoxy paint. Water line should be painted red and foam line in yellow colour paint.

**All vinyl / reflective stickers/ films of LG, 3M** or equivalent shall be used on the exterior body shell. Details of the graphics shall be finalized after due approval of FACT Ltd

The Company name with Logo – Fertilizers and chemical Travancore Limited (Govt. of India Undertaking) Udyogamandal Complex shall be written on both sides with golden yellow / reflective white stickers in Hindi and English. Also, mirror image letters of FIRE shall be painted in golden yellow color on front side of the vehicle.

Printed matter shall be finalised with FACT representative prior to painting/ stickering on Fire Tender.

**All the painting shall be as per RTO Rules.**

All the lockers/cabins shall be provided with stainless steel nameplates with letter etched on it boldly indicating the content.

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

## 21.0 GENERAL REQUIREMENTS

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

1. Rear view mirrors on either side shall be provided on the vehicle at suitable location.
2. Mudguards shall be provided on the wheel.
3. CCE approved Spark arrestor shall be provided at the exhaust
4. Before final painting of the Fire tender, two coats of anti-corrosion and primer coat and one coat of epoxy paint shall be applied on the chassis and fabricated body, except external body where PU painting is to be done.
5. Hand railing of Good quality shall be provided near all the doors in the Drivers cabin and crew cabin at both the sides.

6. Holes shall be to the flooring of Fire Tender (including all lockers) at suitable locations so that accumulated water shall be draining out easily while washing of the vehicle from inside.
7. The rear platform of the fire tender shall be fabricated (with a convenient space) in such a way that two firemen can stand on it comfortably.

## 22.0 GUARANTEE:

Manufacturer shall guarantee the design, material, workmanship and performance of complete Unit for a period of **18 months** from the date of supply of the vehicle. Defects if any shall be rectified by the BIDDER's representative at our works at no extra cost to FACT.

The chassis and related systems including engine, transmission, etc shall have a minimum warranty of 5 years and the same shall be ensured by the bidder.

## 23.0 INSTRUCTION MANUALS, SPECIFICATION AND DRAWINGS

The instruction books/manuals, drawings for the guidance of the user including both operation and normal maintenance, shall be supplied for the pump/PTO installed by the BIDDER. The manual shall include item wise spare parts list with part numbers .

## 24.0 INSPECTION AND FINAL ACCEPTANCE TESTS

- 24.1 The successful tenderer shall have the work inspected and approved at the following stages by the purchaser/ indenter or his authorized representative. ***The inspections as noted below will be done by FACT and intimation shall be given in advance period of 15 days. All Inspections shall be arranged by the bidder at his cost.***

**Inspection shall be carried out in stages as per QAP submitted by the bidder in conformity with the TPS, approved drawings, standards specified in the specification and approved by FACT**

### STAGE-1

After purchase of Chassis by the BIDDER the visual inspection and verification of documents shall be carried out by the inspection authority at the firm premises.

#### **After completion of understructure:**

- a. Check material Test Certificates (MTC), components / sub-assemblies identification, before fabrication.
- b. Check dimensions of understructure on chasses, fabricated components as per specifications & approved drawings.
- c. Check all documents including documents of imported items.
- d. Check welding procedure, welder qualifications as per relevant ASME codes / standard.

### **STAGE-2: After completion of paneling:-**

- a. Check overall dimensions, body work, cab interior fittings.
- b. Check NDT / NDT records of welded joints as per ASME Sec, V, and extent of NDT as per specifications.



- c. Check construction details of Water Tank and Foam Tank and carry out hydro test at 0.5 kg/cm<sup>2</sup>. Check sheet thickness bottom 5.0 mm & other plates including baffles 4.0 mm check chemical composition of metal for SS 304 and SS 316 as applicable. Check capacity of both the tanks check all piping / fittings, internals, bolts & nuts of the tanks for SS 304 / SS316. Leakage test for both the Tanks for 24 hours. Check all LP piping system at a hydraulic test pressure of 15 kg/cm<sup>2</sup> for a minimum 30 minutes for any leak.
- d. Check location / placement of control panel, Instruments, controls, other equipment & accessories etc.
- e. Test power take off unit (PTO).
- f. Test the foam induction & foam compound proportionator system.
- g. Verify monitor position and its movements.
- h. Carry out hydrostatic test of pump (centrifugal) as per specification.

**STAGE-3: After completion of fitment & painting:-**

- a. Check stability of the unit after mounting all equipment and accessories. It should be free from undue rattling and vibration.
- b. Each appliance shall be clearly and permanently marked.
- c. Check proper functioning of all types of signal lights, alarms, etc.
- d. Check quality of workmanship.
- e. Painting of exterior/Interior of Foam Tender, Fire Service Insignia conforming to IS.
- f. Check completeness of equipment for any deficiency in quantity to standard quality or non-conformation to specification should be rechecked.
- g. Check calibration of instruments, gauges, tools, accessories etc.
- h. Check operation of various levers, locks, caps, fitment of tanks, linkages, markings and work.
- i. Check storage space for adequacy

**24.2 PERFORMANCE TEST:** The following performance test shall be carried out at BIDDER' site.

- (i) Pump Test: The Pump shall be run for a period of four hours non-stop delivering the rated output with a lift of 3 Meters. During the test all parameter like cooling system, temperature of the engine, oil, PTO sump oil temperature shall match as per manufacturers recommendation.
- (ii) The pump casing (LP side) shall be subjected to a hydraulic pressure as per the manufacturer's standards for any leakage.
- (iii) Priming Test: The primer should be capable of lifting water at least from a depth of 7.0 m at a rate of not less than 30 cm per second.
- (iv) High Pressure Hose Reel: to be tested at a Hydraulic Pressure of **60 kg / cm<sup>2</sup>**.
- (v) Foam making system: Induction 3% at the specified settings.
- (vi) Throw: Monitor / branch.

**24.3 FUNCTIONAL TESTS:**

- (i) Complete assembly shall be pressure tested for pressure soundness of joints & connections with the discharge parameters as specifies.
- (ii) Carry out leakage test and performance tests of foam cum water monitor as specified.

- (iii) Test the working of monitor and pump proportionator system for making foam. Meanwhile check for satisfactory working of control panels, gauges, instruments, valves and other mechanism. For the above test foam compound will be provided free of cost by BIDDER.
- (iv) Test the working of DCP system. Meanwhile check for satisfactory working of control panels, gauges, instruments, valves and other mechanism. For the above test DCP will be provided free of cost by BIDDER.

#### 24.4 ACCEPTANCE TESTS AND ROAD TESTS

After successful completion of all the tests previously mentioned, the following acceptance tests shall be offered to the complete satisfaction of the user without any extra cost.

##### 24.4.1 Stability:

The stability of the appliance when under fully equipped and loaded condition should be such that if the surface on which the appliance stands is tilted to either side, the point at which over turning occurs is beyond an **angle of 27°**.

When the vehicle is brought to a stop in 9 m when travelling at 32 KM/hr. fully loaded and manned on pavement without any adverse effect on the mounted equipments.

##### 24.4.2 Gradient:

The appliance shall be capable of being started from rest on a gradient of 1 in 4. (BIS 10460-1983 SI No 2.2 d)

##### 24.4.3 Pump Test:

Pump test to be carried out to check pump manufacturer's rated output at varying pump pressure for a continuous period of 4 hours. During this test, the temperature of engine should not exceed the rated temperature and that of lubricating oil 79°C.

##### 24.4.4 Priming Test:

The primer should be capable of lifting water at least from a depth of 7.0 m at a rate of not less than 30 cm per second.

##### 24.4.5 Articulation Test:

The vehicle will be tested for articulation & will not show any signs of stress during this test as per IS 13506 – 2013.

##### 24.4.6 Hydraulic Testing:

All the LP delivery piping system shall be tested at a hydraulic test pressure of 15 Kg/cm<sup>2</sup>. In case of the high pressure section, it will be tested at a min. of 60 Kg/cm<sup>2</sup>.

##### 24.4.7 Shower Test:

After completion of the fabrication, the vehicle will be subjected to shower test as per the norms laid down under BIS. The appliance will not show any signs of leakages during this test as per IS 11865 – 2006.

##### 24.4.8 Road Tests:

After completion of all the above mentioned tests, road tests will be carried out to check chassis, manufacturer's rating for acceleration, maximum speed, braking efficiency and turning circle with appliance fully loaded. Also when travelling at 48 km/h on a level dry surface the foot brake shall be capable of stopping the vehicle within a distance of 15 m from the point at which the brake is



applied. The hand brake shall be capable of holding the fully laden appliance on a dry surface gradient of 1 in 4 when in neutral gear.

NOTE- The fabricator of the appliance should provide suitable facilities for carrying out all the tests, specified above.

**All certificates as specified and necessary documents against proof of source of supply shall be submitted by the BIDDER for review and acceptance by FACT during inspection at bidders works.**

**The Multipurpose Fire tender shall be dispatched only after successful completion of all inspection and acceptance tests by FACT and Inspection Release Certificates (IRC) obtained.**

#### **25.0 TRAINING:**

After supply of Fire Tender, the bidder shall provide one-week training on operation & maintenance at owner's site & charges for the same shall be included in the quoted price.

#### **26.0 DEVIATIONS:**

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

#### **27.0 PERFORMANCE BANK GUARANTEE.**

Successful Bidder will have to submit Performance Bank Guarantee in prescribed Format for 10% of contract value to cover defect liability period of **18 months** from the date of delivery.

#### **28.0 DELIVERY.**

1. Complete Fire Tender as per the above scope shall be delivered **within 6 months** from the issuance date of purchase order.

2. Fire Tender shall be delivered at Fertilizers and chemical Travancore Limited (Govt. of India Undertaking) Udyogamandal Complex, Udyogamandal, Kerala - 683501 as complete unit after completing all the works and with necessary documents required for permanent registration in Kerala without any additional charges.

#### **29.0 TRANSPORTATION**

Transportation of chassis from chassis manufacturer/dealer to the party's site and after fabrication work, the delivery of the Fire Tender to, M/s Fertilizers and Chemicals Travancore Limited, Udyogamandal Kerala-683501 shall be in bidder's scope.

#### **30.0 FINAL APPROVAL FOR FABRICATION**

1. After issue of Work Order/Purchase Order, successful bidder has to confirm and get approval of the drawing from FACT prior to actual starting of fabrication work.

2. After due approval of drawings by FACT, BIDDER shall start the fabrication Job.

**31.0 DOCUMENTATION:**

- (i) Certification that the Fire Tender has been designed manufactured and tested to meet the specified requirement.
- (ii) Test certificates from OEM for pump and PTO unit.
- (iii) Performance test certificate.
- (iv) Certificate for roadworthiness of Fire Tender.
- (v) Warranty / Guarantee Certificate.
- (vi) CCE approval as required.
- (vii) Operation and Maintenance Manual, Spare Parts list and drawing of Pump, PTO, piping diagram, etc.
- (viii) Temporary Registration and Insurance, Sale Letter and other documents as required under MV act for onward registration of Fire Tender in Kerala.

**32.0 ANNEXURES:**

ANNEXURE - 1: Accessories for fire tender

ANNEXURE - 2: Electrical Fittings

ANNEXURE - 3: Mandatory Spare parts list of Pump (with primer) and PTO for Each Fire Tender

ANNEXURE - 4: Tools for tool box

ANNEXURE - 5: Technical specifications for self-contained breathing apparatus (SCBA)

ANNEXURE - 6: Technical specifications of fire proximity suit

ANNEXURE - 7: Pre-Qualification Criteria and Price Bid Format

ANNEXURE - 8: Technical checklist

ANNEXURE - 9: Format for compliance statement



## ANNEXURE – 1

DETAILS OF ACCESSORIES		
Sl. No	Items	Qty
1.	Firescape / King 35 feet Truss Type Aluminum Double Extension ladder as per JCDD/10 standards (as per section 18 of TPS)	1 No
2.	PVC suction hoses in 2.5 Mtrs Length fitted with round threaded male & female couplings, heavy duty, made of GM of conformed to IS:902 and shall suit with pump suction inlet.	4 Nos
3.	Suction Metal strainer for item-2 as per IS:907	1 No
4.	Basket strainer for item-2 as per IS:3582	2 Nos
5.	SS Dividing breaching with control valve as per IS: 5131.	2 Nos
6.	SS Collecting breaching 63 mm size as per IS:905	2 Nos
7.	Universal suction wrenches	2 Pairs
8.	Fully Imported Drager / Scott / Honeywell make light weight Self Contained Breathing Apparatus (SCBA) Set with carbon composite air cylinder of 45 min duration of 6.8 ltrs 300 bar pressure shall be CE marked to EN 137. Air Cylinder & it's valve shall have NOC from CCE-Nagpur. (Detailed specification attached separately)	4 Set
9.	Fire Proximity Suit, with fireman helmet, coat, trousers, gloves and anti-fire hoods (detailed spec attached separately)	4 Set
10.	Fire Hose -Type 3, IS 636, 63 mm, 15m length RRL Fire Hoses with couplings	10 Nos
11.	Fire Hose -Type 3, IS 636, 63 mm, 30m length RRL Fire Hoses with couplings	4 Nos
12.	Water Curtain Hose - 15m, Make: Newage	3 Nos
13.	Foam branch FB10X fitted with 63mm GM male coupling and spray control	2 Nos
14.	Medium expansion foam branch, 50X	1 No
15.	Inline inductor	2 Nos
16.	Triple purpose nozzle, 63mm, SS, as per IS:2871	2 Nos
17.	Pistol grip diffuser branch, 63mm, selectable gallonage 350 to 750 LPM, light weight alloy, ball valve for flow control, EN15182 CE certified / NFPA 1964 compliant.	5 Nos
18.	Foam tube for pistol grip diffuser branch (sl. no. 17)	5 Nos
19.	Special branch pipe (fog extension applicator) with 6-feet-long tubing with bend, made of light weight material, with fog head on one end and instantaneous male coupling on the other end.	2 Nos
20.	Extender of length 6 feet made of light weight material, with instantaneous male coupling on one end and instantaneous female coupling on the other end. (For using with sl. no. 19)	2 Nos
21.	Jumbo Water Curtains made of SS.	5 Nos
22.	Double female adapter.	2 Nos
23.	Double male adapter.	2 Nos
24.	Water-Jel Blanket/ burn shield blanket 6ft X 5ft	2 Nos
25.	Spine board stretcher with head immobilizer, straps and related accessories	1 No

26.	Good quality foldable / collapsible Stretcher	1 No
27.	Good quality Fire Beater	2 Nos
28.	Ceiling Hook as per IS 927	1 No
29.	Good quality Fire blanket	2 Nos
30.	Portable telescopic light-Battery operated telescopic LED light with carrying case and other necessary accessories. Make - Nightsearcher, Model - Solaris Pro.	1 No
31.	Intrinsically safe flashlight(LED) - with minimum 120 lumens, area classifications rating for Zone-0 application. Item shall be IEC/ATEX/ UL/PESO approved. Make - Nightsearcher / Nightstick / Wolflite / Pelican / Streamlight	3 Nos
32.	Intrinsically safe rechargeable searchlight (LED) - with minimum 300 lumens, area classifications rating for Zone-1 application. Item shall be IEC/ATEX/ UL/PESO approved. Make - Nightsearcher / Nightstick / Wolflite / Pelican / Streamlight	2 Nos
33.	Rechargeable searchlight (LED) – Long range, minimum 2 mode of brightness, with beam and floodlight, with minimum 850 lumens. Make - Nightsearcher/Nightstick/Wolflite/Pelican/Streamlight/ Aska-Dragon	2 Nos
34.	Inflatable floating walkway/Rescue path - 3 piece, each with min size 5mx1.2m, for shore to vessel access or for rescue purpose, tough built, with inflation accessories (via BA set cylinder (preferred) or hand/foot pump), repair kit, storage case/bags and other necessary accessories. Make: Vetter / Trelleborg	1 Set
35.	Pneumatic leak sealing bag set - Minimum 3 bags of different sizes, with belt and ratchet, capable of using on tanks of min. 5m dia., high chemical resistance including acids, with inflation accessories (via foot pump and BA set), storage / carrying case and other necessary accessories. Make: Vetter / Holmatro / Weber / Trelleborg	1 Set
36.	Portable ladder, telescopic type, foldable (A-type), not less than 5m when extended. Make preferred: Corvids.	1 No
37.	Electric motor operated barrel type pump for transferring foam concentrate from foam drum/barrel to foam tank. MOC of body, shaft, rotor, impeller: SS 316; Discharge: 40-50 lpm approx. at discharge head 5m.	1 No
38.	Felling axe, large as per IS:703	1 No
39.	Hand axe as per IS:703	1 No
40.	Fireman axe as per IS:926	4 Nos
41.	Pick axe as per IS:273	1 No
42.	Halligan tool	4 Nos
43.	Crow bar with bend chisel and point end as per IS: 704	2 Nos
44.	Sledge hammer 6.5 Kgs as per IS: 841	1 No
45.	Good quality spade	1 No
46.	Good quality Sickle	4 Nos
47.	Good quality bill hook	4 Nos



48.	Heavy duty bolt cutter	1 No
49.	Hydraulic jack 40 Ton capacity	1 No
50.	Hose ramps	6 Nos
51.	Rope, hemp/manila, 50mm circumference, 15 meter long	2 Nos
52.	Kernmantle rope, Static - low stretch, 12mm dia, 30m long, spliced / stitched eye ends, as per EN1891 - type A	2 Nos
53.	Kernmantle rope, Static - low stretch, 12mm dia, 15m long, spliced / stitched eye ends, as per EN1891 - type A	3 Nos
54.	Storage box, Make: Stanley, Model: Essential Rolling Workshop STST1-80151	2 Nos
55.	50L Chest with wheel, Make: Stanley, Model: Essential job chest STST1-80150	2 Nos
56.	Tool Kit with good quality tools. (Annexure 4)	1 set

**NOTES:**

1. Accessories with ISI mark to be supplied wherever available. Otherwise bidder shall endorse certificate that accessories confirm to applicable standards if any.
2. Any other accessory not included above, which makes the appliance more efficient & useful to be supplied / installed on the Multipurpose Fire Tender.
3. All branches and nozzles, FMBP, breaching's and adaptors shall be of make shall be of make Newage/Aaag/Firefly.
4. The prices of accessories (Annexure 1) will be considered for evaluation.

**ANNEXURE - 2****ELECTRICAL FITTINGS**

<b>Sl. No</b>	<b>Item</b>	<b>Qty.</b>
1.	Fog Lamps	2 Nos
2.	Twin coloured LED warning flashers to be provided 2 sides and rear (3+3+2)	8 Nos
3.	Grand LED Light Bar 44" with Inbuilt PA System with Multi-tone Siren & Hooter in one unit.	1 No
4.	Rear view camera with visual display in the crew cabin	1 Set
5.	LED Search Light with 75 meter Cable Reel of not less than 500 Lumen and 100 meter Range with tripod etc.	1 No
6.	Articulated spot light. (mounted near driving compartment)	1 Nos
7.	Reverse Lights /Lamp and Buzzer/Horn to assist reversing	1 Set
8.	Tail lamps - Two of combined stop and tail	1 Set
9.	Cabin light	2 No
10.	Equipment locker lights	As required
11.	Rear reflectors	1 Set
Note: The prices of Electrical fittings (Annexure 2) will be considered for evaluation		



## ANNEXURE-3

MANDATORY SPARE PARTS LIST OF PUMP (WITH PRIMER) AND PTO			
SI No	Description	UOM	Quantity
<b>A</b>	<b>For Water Pump and Primer</b>		
1	Renewable wear rings	Set	One
2	Bearings	Set	One
3	Mechanical seal assembly	Set	One
4	Normal (Low pressure) impeller	No	One
5	High pressure impeller(s)	Set/ No*	One
6	Oil Seals	Set	One
7	Gaskets / O-rings	Set	One
8.	Common pump shaft (LP and HP)	No	One
<b>B</b>	<b>For Power Take OFF (PTO) unit</b>		
1	Bearings	Set	One
2	Oil Seals	Set	One
3	Cooling Coil	No	One
4.	Gaskets / o rings	Set	One

## NOTES:

1. BIDDER shall submit **detailed list** of mandatory spares for water pumps (including primer) and PTO **as per the above with Part Nos** and drawing along with techno commercial bid for review by FACT.
2. The prices of mandatory spares for water pumps (including primer) and PTO (Annexure 3) will be considered for evaluation.

\*As Applicable.

ANNEXURE – 4		
DESCRIPTION OF TOOLS		
(To be maintained as part of item 56 of annexure-1)		
Sl No	Description of material	Quantity
1.	Set of pipe wrenches (3 Nos), 8",12",18", IS:4001 (part-1) type.	01 Set
2.	Heavy duty pipe wrench, 24", IS IS:4001 (part-2) type	01 No.
3.	Chain pipe wrench, 100mm	01 No.
4.	Double open end spanner (set of 6 mm to 32 mm) 6x7, 8x9, 10x11, 12x13, 14x15, 16x17, 18x19, 20x22, 21x23, 24x26, 24x27, 25x28, 30x32 (Total 13 Nos.)	01 Set
5.	Ring spanner set (set of 6 mm to 32 mm) 6x7, 8x9, 10x11, 12x13, 14x15, 16x17, 18x19, 20x22, 21x23, 24x26, 24x27, 25x28, 30x32 (Total 13 Nos.)	01 Set
6.	Adjustable slide wrench (03 Nos.) 150 mm, 200mm, & 300 mm	01 Set
7.	½" Socket wrench set, 8-32mm sockets, with sliding bar handle, small & large extension and Heavy duty reversible ratchet, in a case.	01 Set
8.	¾" socket set with various bit sockets, minimum 4.5-8 mm sockets, with sliding bar, extensions and reversible ratchet, in a case. (Item Sl. No. 7 & 8 may be combined to a single set if needed)	01 Set
9.	Allen key set (1.5, 2, 2.5, 3, 04, 05, 06, 07, 08, 09, 10 & 12mm) (12 Nos.)	01 Set
10.	Combination pliers (02 nos.) 150 mm & 200 mm.	01 Set
11.	Nose plier 150 mm	01 No.
12.	Flat file 150 mm, Flat file 200 mm, Half round file 200 mm.	01 Set
13.	Hack saw frame with handle (for 12" long blade) along with 10 Nos. of blades.	01 Set
14.	Screw drivers (04 Nos), 50x3, 100x4, 125x6, 150x8 (in mm).	01 Set
15.	Rivet gun, 2.4mm to 4.8mm capacity	01 No.
16.	Hammer, 0.9-1.0 Kg	01 No.
17.	Claw hammer, 400-500 gram	01 No.
18.	Cordless angle grinder (Wheel dia. 100 mm) - min 18V, with spare battery, charger and carrying case	01 Set
19.	Cordless hammer driver drill (chuck size 1.5 to 13mm) - min 18V, with different type (steel, masonry, wood) and different size drill bits, with spare battery, charger and carrying case.	01 Set
20.	Oil Can ½ pint capacity.	01 No.
21.	Grease gun, hand held, lever type	01 No.
22.	Steel measuring tape (05 meter long).	01 No.
23.	Tool box, to contain all above mentioned tools in proper condition. It should be drawer type with 03 pull out drawers and a tote tray with locking system.	01 No.
<b>Note:</b> 1. All hand tools shall be Gedore/Taparia/ Stanley/Jhalani /Everest/Tata Agrico make. 2. All power tools shall be of Makita / Bosch / Dewalt / Stanley make.		



**ANNEXURE - 5****TECHNICAL SPECIFICATIONS FOR SELF CONTAINED BREATHING APPARATUS (SCBA)**

**GENERAL:** The set shall be self-contained open circuit type compressed air Breathing Apparatus set fully confirming to IS 10245 PART II / EN137. The mass of the ready to use set shall not exceed 14.0 kg. The item shall be supplied with rigid carrying case.

**BACK PLATE BODY / BODY HARNESS:** Ergonomically designed back plate, constructed using a strong moulded composite polyamide material with carbon fiber and is antistatic, chemical and impact resistant. The shoulder harness is made from flame retardant polyester webbings with center adjustable buckle and independent shoulder strap. Back plates shall have moulded carrying handles.

**FACEMASK:** Full mask should conform to IS 14166 / EN136. Visor shall provide wide-angle, panoramic vision and be made of replicable shock and heat resistant polycarbonate material. The facemask shall be fitted with communication devices or shall have facility to use earpiece with inline PTT mic compatible with VHF of Make: Motorola, Model GP-328

**CYLINDER:** The air cylinder shall have a water capacity of 6.8 litres. The test pressure shall be 1.5 times the working pressure. The cylinder shall be aluminium lined, fully wrapped carbon composite material and CE marked. The weight of cylinder when fully charged shall not be more than 6.8kg. The valve shall be inline type made certified to EN 144-2. The cylinder with valve shall be approved by PESO.

**PRESSURE REDUCER:** The pressure reducer with must be directly fitted to the cylinder valve assembly and shall be capable of supplying air at rate of 1000lit/min.

**LUNG DEMAND VALVE:** The LDV shall be quick removal type positive pressure demand valve featuring servo-assisted, tilting diaphragm mechanism with low inspiratory resistance and automatic first breath actuation. The LDV shall have the maximum flow capability of 500 lpm and even at 20 bar pressure should be capable of giving flow of 300 LPM and shall activate at breath at 4- 10 mbar.

**PRESSURE GAUGE:** connected by a high-pressure hose (non-metallic outer surface). It should have a luminescent dial encased in a rubber cover. Should be integrated with high pressure activated and medium/high pressure driven warning whistle and operating at a residual pressure of 55+/-5 bar.

**HOSES:** All the hoses used in the set shall be flexible and non-kinking type and shall permit the free movement of the head. The design of the hose shall be such that it shall not restrict or close the supply at any time and shall not collapse. The hose connected to lung demand valve from the pressure reducer shall be fitted with Quick Release Coupling. Recommended working / burst pressure are as follows. Medium pressure hose: Working pressure: 16 bar max. Burst pressure: 80-bar min. High-pressure hose: Working pressure: 450 bar max. Burst pressure: 800-bar min.

**GUARANTEE:** The system / equipment shall be guaranteed for design, satisfactory performance, material for a period 18 months from the date of supply. Any equipment/part found defective during guarantee period shall be replaced/rectified by supplier free of cost to FACT.

**TEST CERTIFICATE:** Test certificate of cylinder, lung demand valve, pressure reducer, Pressure gauges and Hoses to be furnished along with supply.

**ANNEXURE – 6****TECHNICAL SPECIFICATIONS OF FIRE PROXIMITY SUIT**

1. **General Description:** Coat with a high central zip closure, covered with suitable storm flap. Trouser should have standard inch waist size and adjustable crossover braces. The waist of the Trouser should be elasticized at both sides to provide a comfortable flexible fit. Size chart should be provided along-with the offer
2. **Standards:** The Coat and Trouser must meet the NFPA 1971; 2007 or EN 469: 2005 Level 2 standards or their latest applicable version. The Suit should bear UL marking (for NFPA certified suit) or CE marking (for EN certified suit).
3. **Construction:**
  - 3.1. The Coat and Trouser should have a three-layer construction.
    - 3.1.1. Outer Cloth: The outer shell fabric should be made from inherently flame resistant para aramid fibre with requisite blend of antistatic fibres.
    - 3.1.2. Moisture Barrier: Moisture Barrier shall be Fire resistant and breathable in nature. The construction should be micro porous in nature like non-woven substrate/ felt / PU / spun lace aramid - suitably laminated with PTFE / PU like membrane or treated with compound to ensure that no water ingress from outside besides allowing perspiration and heat to escape from inside.
    - 3.1.3. Thermal Barrier: The Thermal Barrier should consist of two integrated or quilted layers. The innermost layer facing the Moisture Barrier should be made from inherently flame resistant fibres in non-woven felt / corded lane construction.
  - 3.2. The Coat and Trouser should be detachable i.e., it should be able to be used as a single layered Coat or multiple layered Garment and should be detachable by buttons from inside.
  - 3.3. Seams: All sewing to be done using para-aramid or equivalent strong inherently FR thread. The seams on the outer layer should be stitched with strong thread overlock.
  - 3.4. The elbow and knee should have an extra layer of outer cloth as reinforcement. The elbow and knee region should be shaped or designed suitably for comfort and flexibility
  - 3.5. Pockets: Coat should be provided with min. 5 pockets as standard. 2 waist pockets on the lower fronts with flap closure, 2 bellow pockets on chest and 1 patch pocket inside the coat. The pant should have min. 1 internal patch pocket inside the right or left hip.
  - 3.6. Collar: The collar of the Coat should be designed so that the neck portion is doubly secured and covered by means of a throat tab, fitted with fire retardant Velcro for secure fastening across the neck. A hanger loop, centrally placed on outer collar or inside section to be provided to facilitate hanging
  - 3.7. Front Closure: The coat should have a heavy-duty molded zip beneath a full length catch flap, closing with fire retardant Velcro.
  - 3.8. Sleeves & Cuffs: The sleeve should be designed to have an additional gusset (all 3 layers) in the underarm or any other design innovation to allow the arms to move freely without raising the hem of the coat. An aramid rib-knitted internal cuff to be provided for suitable wrist protection.



- 3.9. Reflective Tape: The suit should have a high quality reflective tape provided at the following places. The tape should be premium quality and should comply with test parameters stipulated in the corresponding NFPA/ EN standards
- (1) Single row 50 mm width, around hem/ waist (including across front flap)
  - (2) Single row 50 mm width, around lower sleeves.
  - (3) single row of 50 mm wide reflective tape around lower leg.
- 3.10. The tape should be premium quality and the quality should comply with the length and test parameters stipulated in the corresponding NFPA/ EN standards
- 3.11. Sizing: Size chart should be provided along-with the offer. Length of the jacket should be not less than 32 inch.
- 3.12. Labels: A large clear label should be permanently attached (sealed) or stitched inside the lining of the fire suits. This label should give full details of sizing, wash/care information, style and date of manufacture and traceability coding.
- 3.13. FACT Logo should also be permanently attached (sealed) or stitched on the coat, in the front (Left Chest) and Back Side of the coat in a visible size.

#### **4. ACCESSORIES**

##### **4.1. Helmet**

- 4.1.1. STANDARD: Certified to EN 443: 2008 or NFPA 1971: 2007 standards
- 4.1.2. CONSTRUCTION: Made of composite fibre glass capable of providing full protection even against short flash over flames temperature exposures of upto 1000 deg C.
- 4.1.3. Helmet with visor should have a modular design whereby the face and neck is also protected against flames
- 4.1.4. Visor should be provided capable of withstanding extreme heat and impact.
- 4.1.5. Visor should be capable of being closed - housed within the inner shelf of the Helmet, when not in use and should have double Visor with a goggle visor inside for better protection.
- 4.1.6. Weight of the Helmet complete with visor should not exceed 1.5 Kgs
- 4.1.7. Head size adjustable feature should be available for fitting various head size circumference.
- 4.1.8. Waterproof Torch - EN 443 tested should be provided along with the Helmet too.
- 4.1.9. The Helmet should have the attachment to fix torches on both sides and on top.

##### **4.2. Gloves**

- 4.2.1. Certified to EN 659: 2008 or NFPA 1971: 2007 standards. The Gloves should bear CE mark or UL certification to NFPA -1971.
- 4.2.2. Five fingered, Chrome Leather, soft, supple 2-3 layered Glove for hand and wrist protection. The Glove should incorporate knitted wrists made of FR Heat resistant material. All threads used for stitching the gloves should be inherently Flame retardant.

##### **4.3. Anti-Fire Hoods**

- 4.3.1. Certified to EN 13911:2004 in connection with EN 340:2003 or NFPA1971 Standards.
- 4.3.2. The Neck Protector should be fit and properly covering the shoulders.
- 4.3.3. The Hood should be double layered having each layer of the Fabric of about 230 GSM, inset collar and face opening with elastic.

**ANNEXURE – 7**  
**PRE-QUALIFICATION CRITERIA**

Sl. No	Pre-Qualification Criteria - Conditions	Supportive Documents to be submitted as proof	Check
1	Bidder shall be in the business of manufacturing/fabrication/assembly of Fire Tenders for more than 5 (five) years' ending on the date of NIT.	Copy of 'Certificate of Incorporation', NSIC or equivalent Certificate specifying the nature of business of the firm.	
		List of clients to whom Fire Tenders were supplied to be submitted to prove this pre-qualification criteria. The following details are also required:	
		a) Purchase Order No & Date	
		b) Details of Fire Tender	
		c) Name of Organization	
		d) Quantity	
2	Bidder should have fabricated, supplied and proved performance of <b>minimum</b> one number (1 No) Multi-Purpose Fire Tender having water pump capacity of <b>at least 4000 LPM</b> at a pressure of <b>10 Kg/cm<sup>2</sup></b> built on <b>minimum 25 Ton GVW</b> Chassis during the last 5 years ending on the date of NIT.	2.1 Copy of Purchase Order with technical Specifications showing all relevant technical details.	
		2.2 Performance Certificate from the client to prove satisfactory performance for at least one year of the supplied fire tender against purchase order submitted towards Sl no 2.1 above.	
3	The Bidder should have manufacturing/fabricating / assembling facilities and adequate testing/quality assurance facilities of Fire Tender.	List of machinery, equipments and testing facilities.	
4	<i>(Financial criteria to be filled by concerned department)</i>	<i>Annual report (audited balance sheet and profit &amp; loss account) of the relevant periods, duly authenticated by a Chartered Accountant/Cost Accountant in India or equivalent in relevant countries.</i>	

Note:-

1. FACT shall have liberty to verify the references submitted by the Bidders with users or customers and accept/reject the bids based on the feedback.



2. Pre-Qualified bids will only be considered for Technical Evaluation. Technically and Commercially Acceptable Bids will only be considered for Price Bid opening.
3. Copies of documents submitted shall be sealed and duly attested by the bidder. Submission of authentic documents for meeting the above technical and financial criteria is the prime responsibility of the bidder. Wherever FACT has concern or apprehension regarding the authenticity/ correctness of any document, FACT reserves the right of getting the documents cross verified from the document issuing authority. In case of ambiguity or incomplete documents, FACT reserves the right to reject the Bidders Bid without assigning any reason.

#### PRICE BID FORMAT

Sl. No	Description	Qty	Unit	Unit Rate (INR)	Total Amount (INR)
A	Supply of TATA/ ASHOK LEYLAND / BHARATH BENZ chassis, as per TPS No. FACT/FIRE SERVICES-FT/23/01. ( Model/Make of Chassis to be specified)	1	No		
B	Design, Fabrication, Testing and supply of Multi-purpose Fire Tenders on TATA/ASHOK LEYLAND /BHARATH BENZ Chassis as per TPS No. FACT/FIRE SERVICES-FT/23/01	1	No		
C	Supply of Accessories as per Annexure-I	1	LS		
D	Supply of Electrical fittings as per Annexure-2	1	LS		
E	Mandatory Spares for Water Pump, Primer and PTO as per Annexure -3	1	LS		
	<b>Total (Rs)</b>				

Note: Payment for Chassis will be made at actuals against documentary evidence, subject to the max. amount quoted by bidder as above. Other Specified conditions apply.

**ANNEXURE – 8****TECHNICAL CHECK LIST**

BIDDER's Name: M/s \_\_\_\_\_

ENQUIRY No: \_\_\_\_\_

BIDDER's Offer Ref No &amp; Date: \_\_\_\_\_

Contact Person: \_\_\_\_\_ E-mail \_\_\_\_\_

1. ALL CORRESPONDENCE MUST BE IN **ENGLISH** LANGUAGE ONLY.
2. DULY SIGNED & STAMPED COPIES OF THIS "TECHNICAL CHECK LIST", WITH ALL THE CLAUSES DULY CONFIRMED/ PRECISELY REPLIED TO BY THE BIDDER, SHALL BE ENCLOSED.
3. FAILURE ON PART OF THE BIDDER IN SUBMITTING THIS DULY FILLED-IN "TECHNICAL CHECK LIST" WITH UN-PRICED BID AND / OR SUBMITTING INCOMPLETE REPLIES MAY LEAD TO REJECTION OF BIDDER'S BID.

Sl. No.	DESCRIPTION	BIDDER'S CONFIRMATION / ANSWER
1.	This Technical Check list with categorical confirmation against each of the clauses of the TPS shall be furnished along with the bid. Deviation(s), if any, against the TPS or applicable specifications, codes or other technical documents etc. attached shall be duly consolidated under the " <b>COMPLIANCE STATEMENT (TECHNICAL)</b> " enclosed. In case no deviations are furnished, it will be presumed that all requirements are fully met. Any deviations/ deletions/ corrections made by the BIDDER elsewhere will not be taken cognizance of and all such deviations shall be deemed to have been withdrawn by the BIDDER. Confirm compliance.	



2.	Confirm that all work / activities covered in the TPS including design, procurement of chassis, fabrication, body building, procurement of equipments, fitment, exterior/interior work, supply of accessories, tools, electrical fittings, water pump and PTO spares, inspection and testing, documentation, transportation, supply and delivery of multipurpose fire tenders complete in all respects to FACT –Udyogamandal Complex with necessary documents required for permanent registration in Kerala is in the scope of the BIDDER and to be arranged and carried out by the BIDDER at his own cost. Also any other requirements which are not covered under this TPS , but may be necessary to complete the Fire Tenders and/ or to fulfill the operation/performance requirements shall be provided by the BIDDER at his cost , to the full satisfaction of M/s FACT	
3	The vehicles shall conform in all respect of the provisions contained in the M.V. Act 1988 and M.V. Rules 1989, RTO rules etc. applicable in Kerala State, applicable emission norms and to any other statute modifications or re-enactments thereon from time to time. Also All the equipments / documents necessary for R.T.O's clearance shall be provided on the vehicles.	
4	The BIDDER shall coffer strict compliance to the acceptable makes specified. There shall be no deviation on the specified makes for chassis, pump and Power Take Off (PTO) units.	
5	All materials/ items shall be BIS marked & where BIS is not available the material shall be of high quality from reputed manufacturer.	
6	<b>Documents / Drawings along with Bid:</b> Confirm submission of all documents/ drawings along with the bid as per SI No 2.3 of the TPS	
7	<b>Documents / Drawings after LOI / Order:</b> Confirm submission of all documents/ drawings within 15 days after LOI/ Order as per SI No 2.4 of the TPS	
8	Two nos soft and Six Nos hard copies of all documents, instruction manual, all drawings, documents, manuals, inspection reports, certificates, CCE/ PESO approvals and other approvals applicable, shall be submitted along with supply .	

9	Confirm that after issue of Purchase Order, bidder has to confirm and get approval of the drawing from FACT prior to actual starting of fabrication work. Only after due approval of drawings by FACT, BIDDER shall start the fabrication Job	
10	No extra claim will be entertained for any changes, which may arise during review / approval stage by the client of BIDDER's drawings / documents / procedures. BIDDER to confirm	
11	Make and model no of Chassis offered.	
12	Catalogue of the Make / Model of the chassis manufacturer with full details submitted. Please confirm submission	
13	BIDDER shall arrange necessary temporary registration/permit and insurance till vehicles are delivered at Fertilizers and Chemicals Travancore Limited, Udyogamandal as specified in the order at their risk & cost.	
14	The chassis shall be procured by the bidder on behalf of the client. Payment for Chassis will be made at actual against documentary evidence, subject to the maximum amount quoted by BIDDER on submission of bank guarantee of equal value.	
15	Load distribution chart, determination of operational FAW, RAW, GVW, and permissible FAW, RAW, GVW etc. of the chassis manufacturer and ensure suitability of the offered chassis for the specified duty. Please confirm submission with calculations.	
16	Make and model no of water pump with primer offered.	
17	Catalogue of the Make / Model of the Water Pump manufacturer showing Material of construction, Capacity, Pressure and other relevant details to be submitted. Please confirm submission	
18	Confirm that the suction and delivery outlets, monitor outlets, mounting, control panels etc. shall be provided as specified in the TPS	
19	Confirm that PTO and cooling system shall be provided as specified in the TPS.	
20	Make, Model No and manufacturer's catalogue of PTO. Please confirm submission	
21	Confirm that the engine and the PTO shall provide sufficient horse power, torque and rpm to enable the pumps to meet and exceed the specified performance.	



22	Relevant Calculations for suitability of PTO for drive line and matching of pumps with PTO and Engine power / torque with sketch (as noted in the TPS). Please confirm submission with calculations.	
23	Confirm that Water tank and foam tank shall be provided of the specified capacities, material of construction, thickness etc. with Electronic LED level indicators and other provisions as specified.	
24	Confirm that the water tank and Foam tank shall be mounted on the vehicle on a sub frame using Metacone mountings/ flexible mounting pads (depending on the manufacturer's standard mounting procedures)	
25	Confirm submission of drawings with details of sub frames with meta cone mounting for water tank, foam tank and any others to chassis along with the bid.	
26	Confirm that automatic foam proportioning system shall be provided as specified.	
27	Confirm that foam cum water monitor of the specified capacity, horizontal throw, Material of construction (MOC) etc. with aspirating type nozzle confirming to IS 8442- 2008 which shall be provided as specified including conformity to performance requirements in the TPS.	
28	Please indicate the capacity, horizontal throw (water and foam) and MOC with size of foam cum water monitor offered.	
29	Make, model and catalogue showing all relevant details, size, performance, MOC etc. of foam cum water monitor offered. Please confirm submission	
30	Confirm that water hose reel, DCP system etc. shall be provided as per TPS	
31	Confirm that Piping and Valves, MOC, Makes, testing etc. shall be provided / carried out as per TPS.	
32	Confirm submission of Flow diagram of water and foam lines with foam proportionate arrangement –Low and High pressure pump along with the bid.	
33	Confirm that DCP system with DCP hose reels and DCP monitor shall be provided of the specified capacities, material of construction, thickness etc.	
34	Please confirm that body work, stowage, lockers, Electrical system, ladder and ladder gallows, painting and marking, workmanship and finish of the vehicle etc. shall be as specified in the TPS.	

35	Confirm all stage inspections, performance tests, functional and final acceptance tests, road tests, all other specified tests shall be carried out by the BIDDER as specified in the TPS and at BIDDER's own cost	
36	All certificates as specified and necessary documents against proof of source of supply shall be submitted by the BIDDER for review and acceptance by FACT during inspection at BIDDER's works. Please confirm.	
37	The Multipurpose Fire tenders shall be dispatched only after successful completion of all inspection and acceptance tests by FACT and Inspection Release Certificates (IRC) obtained. Please confirm.	
38	Confirm acceptance to guarantee/ performance guarantee requirements specified.	
39	Confirm that you will supply the accessories as listed in Annexure -1 of the TPS	
40	Confirm that you will supply the Electrical fittings as listed in Annexure -2 of the TPS	
41	Confirm that you will supply the mandatory spare parts of water pump (with primer and PTO) as listed in Annexure -3 of the TPS	
42	Confirm that you have submitted <b>detailed list</b> of mandatory spares for water pumps (including primer) and PTO as per <b>Annexure 3 with Part Nos and drawing along with techno commercial bid</b> for review by FACT.	
43	Confirm submission of all documentation as specified in the TPS.	
44	Confirm submission of un priced bid in the format enclosed indicating Quoted/ Not Quoted along with the Techno commercial bid	
45	Confirm submission of other Recommended Spare parts with Part NOs, drawings and details by the BIDDER for water pump and PTO for two years' operation in separate sheets (Separate unpriced along with the techno commercial bid and priced along with the price bid).	
46	Confirm submission of Compliance Statement duly filled, signed and sealed by the BIDDER along with the bid.	

## Notes:

1. Please read the TPS in detail before filling up.
2. Only major activities / items are dealt in this check list. Full conformity to TPS is therefore required.



**ANNEXURE - 9****FORMAT FOR COMPLIANCE STATEMENT (TECHNICAL)****ENQUIRY No:** .....**DATE:** .....

We state that our Bid No.....is in full compliance with the documents issued against the TPS No: .....and other attached technical documents except for the deviations listed below: -

**LIST OF DEVIATIONS (TECHNICAL)**

Sl. No	Description	Reasons for Deviation

**Name of Bidder:****Signature with Seal / Stamp****Date:**

### COMPLIANCE STATEMENT

Sl. No.	Terms	Bidder confirmation
1	Offer shall be as per the TPS FACT / FIRE SERVICES - FT/23/01 provided.	
2	Pre Bid Meeting Required and shall be conducted one week prior to the bid opening.	
3	Pre Qualification criteria is provided and only Pre qualified bids shall be considered for Technical Evaluation.	
4	Performance Guarantee and Guarantee required as per the TPS provided.	
5	Pre Despatch Inspection is required as per the TPS.	
6	Complete Fire Tenders as per the TPS provided shall be delivered within 6 months from the issuance date of Purchase Order.	
7	Instruction Manuals, Specification and Drawings shall be submitted as per the TPS condition.	
8	Please confirm : Price Basis – FOR FACT Stores (as per Gem T & C)	
9	Please confirm : Taxes and Duties - The Price offered in GEM is all inclusive of TAX. (as per Gem T & C)	
10	Payment for Chassis will be made at actuals against documentary evidence, subject to the maximum amount quoted by bidder in the Price Bid on	
11	As per TPS , after supply of Fire Tender, the Bidder shall provide one week training on operation & maintenance at owner's site & charges for the same	
12	Please confirm : Payment Terms : 100% payment will be released within 10 days of the issue of consignee receipt-cum-acceptance certificate (CRAC) and on-line submission of bills as per GEM terms and conditions. (as per Gem T & C)	
13	Please confirm : Liquidated Damages: As per GeM – “@ 0.5% of the contract value of delayed quantity per week or part of the week of delayed period as pre-estimated damages not exceeding 10% of the contract value of delayed quantity without any controversy/dispute of any sort whatsoever”(as per GeM T & C)	
14	Please Confirm: A Security Deposit Bank Guarantee of 5 % shall be furnished as per the FACT Proforma (applicable for Orders of Value above Rs. 5,00,000.00) post placement of Purchase Order.	
15	Performance Bank Guarantee for 10 % of contract value for a period of 18 months from the date of delivery shall be submitted by the successful Bidder in the Proforma provided as per TPS conditions.	

Note : All the above columns shall be filled properly, without leaving blanks. Please upload / return this document duly filled-in, along with your bid.