**Specifications for firefighting truck**

The specification covers the requirement for the design, fabrication and supply of foam tender basically consisting of pump having output of more than 2250 LPM at 7kg/sq. cm or 30kg/sq. cm, 4500 liters capacity MS water tank, 500 liters SS foam tank, water monitor, 4 door drivers cabin, storage lockers. Fire tender specification should meet the IS-950 Type B, third revision, Doc: CED 22 (7571), except where the client has otherwise specified and as per the direction of the client.

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| **Sl. No.** | **Name of goods or related service** | **Technical specifications and standards** |
| 1 | Fire fighting vehicle with engine power of 160 HP | * **Engine** * Engine power of 160 HP * With turbo engine * Integral power steering * GVW: 16 tons |
| 2 | Fabrication and body building of water foam tender | * **Pump** * Mounting: rear mounted * Discharge capacity: more than 2250 LPM at 7kg/sq.cm or 300 LPM at 30kg/sq.cm * Suction inlet: 1 number having 100mm size * Delivery outlet: 2 nos. x 63mm female inst. Couplings * Mechanical seal: pump provided with mechanical carbon seal * **Primer** * Type: prismatic fully automatic priming system * Mounting: integrated with the above pump * Priming capacity: 7m at a rate of not less than 30cm/sec * **Foam compound proportionate/inductor** * A round the pump proportionate should be fitted between the suction and the delivery of the pump which will induct foam compound into the water stream with no loss in delivery pressure from the pump. The proportionate should comprise of an inductor and a selector valve which should have five ports calibrated to ensure the correct intake of the foam liquid at the rate of 5-6% to supply solution for the operation of foam making branch pipe. The proportionate should have five positions selector valve i.e. of 1,2,3,4 and 5. The off position should isolate the proportionate so that the pump can operate in the normal manner. The other positions should select air foam liquid to the corresponding foam equipment. It should be able to feed enough foam so that the whole quantity of pump capacity i.e. 2250 LPM should be utilized. * **Power Take Off** * Tank shape: Rectangular * **Tank location**: mounted and strapped with chasis through U-bolts. * Material of construction: fabricated out of mild steel sheets having 5mm all around with 5mm for the baffles, treated for anti-corrosion. * No. of lungs (lifting eyes): 4 * Manhole size: 450mm dia * Manhole location: on top of the tank * Drain plug/drain cock: not less than 50mm I.D * Over flow pipe dia: 100mm * Cleaning hole size: 250mm * Cleaning hole location: at the bottom of the tank * Water label indicator: provided on the tank visible from the control panel * Baffles location: vertically located to prevent surging of water * Hydraulic testing pressure: 0.3 bar * **Foam tank** * A foam compound tank (stainless steel) of 500 liters capacity shall be mounted on the chasis. The tank shall be separate and distinct unit which can be removed separately for replacement. The tank shall be of rigid type and shall be of stainless steel welded construction. The thickness of the sheets shall not be less than 2.5mm. It shall withstand a hydraulic pressure of 0.3kg/sq. cm. suitable stiffeners shall be provided to prevent surge while the vehicle id accelerating, cornering and braking. * Man hole of 450mm dia on top of the tank shall be used for foam filling with a removable strainer fitted to it. The strainer shall be of stainless steel and its total screening area shall be adequate to permit quick filling of foam compound into the tank. The filler cap shall be clearly marked ‘foam’. * The foam tank shall have its top dished/funneling arrangement to enable easy filling from 20 liters drums. Suitable sharp edged puncturing device should be provided at the foam tank filling orifice for puncturing the foam compound drum for facilitating quick filling of the foam compound directly from the drum into the tank without spillage. The design of the tank shall incorporate a removable sump fitted with a drain valve. The foam compound draw off tube shall be positioned in such a manner that the foreign matter or sludge shall not pass into the foam compound. The draw-off tube shall be fitted with a gauge strainer of suitable material mesh, size and adequate straining area. * Means shall be provided for automatic venting of the foam compound tank when the foam is being produced or the tank is being filled. This shall not be incorporated with the cap. The device employ shall be as simple as possible and shall not get clogged easily during normal use of the appliance. * The draw-off tube shall be connected to the foam compound proportionate/inductor and pump, as necessary. The plumbing of this purpose shall have a clear passage of not less than 50mm throughout. * Provision shall also be made for drawing foam compound into the foam producing system from an external source placed at ground level through a pick up tube without interrupting the firefighting operation using foam solution. * **Piping connection**   Connections should be provided in such a way that the following operations are possible:   * Hydrant-tank * Hydrant-reel * Hydrant-pump-reel & off * Tank-pump-reel * Pump-cooling system * Pump-monitor * **Foam cum water monitoring** * A foam monitor shall be mounted on the roof of the appliance in such a manner that it can be manually operated by a member of the crew. The monitor shall be capable of traversing through 360 degree in the horizontal plane and 45 in vertical plane. * The monitor shall be self-aspirating type with a flow rate of at least 1100 LM at 9kg/sq.cm. water foam solution. It shall have an expansion ratio of not less than 8 times, using protein foam compound to specification no. IS 4989 (part 1) 1985. * The monitor shall be capable of projecting the foam discharge to an effective distance of not less than 30m in still air when operated at 7kg/sq.cm pressure in a straight jet pattern. * **Cooling system**: indirect cooling system of open circuit consisting of brass heat exchanger with copper coils. * **Control panel**   The control panel should be provided at the rear of the vehicle and include the following:   1. Pressure gauge 2. Compound gauge 3. Engine throttle control 4. Control valve for tank to pump 5. Control valve for monitor 6. Valve for the horse reel control 7. Valve for the engine cooling panel 8. Illumination lights with switches, driver’s calling bell, etc.  * **Hose reel** * Type & std: 1 unit. High pressure hose reels in 60m length with 25mm dia high pressure hose and high pressure nozzle with pistol trigger, having working pressure of 40kg/sq. cm. * High pressure fog gun: flow rate 0-200 LMP at 40 bar. Net weight 3.9kg approx. throwing range up to 30m. throwing height up to 25m. foam output up to 2.9m/min. * **Lockers:** should be provided for storage of various equipment and accessories within aluminium rolling shutters at the top deck level and internal shelves be provided. * Railing ring: the railing ring around the deck and the climbing ladder at the side of the rear should be made of SS tube material of 1 inch dia. * Locker for pump: the locker box for protecting the pump and the control panel should be provided with aluminium roller shutter. * Pipelines & valves: all the pipelines should be of SS and valves up to 50mm should be ball valves and above 50mm should be butterfly valves. * **Painting:** painting of the body should be very high quality and should be satisfactory to the client. Two coats of primer and 3 coats of 2K paint conforming to IS 2932, color fire red shade no. 536 of IS 5, inside cabin-grey color. * **Accessories:** should provide following accessories with firefighting vehicle: * Fog lamp: **2 nos.** * Reversing light: **2 nos.** * Amber blinker light: **1 no.** * Traffic indicator: **1 no.** * Tools for normal routine maintenance: **1 set** * Search light: **1 no.** * Spot light: **1 no.** * Inspection lamp: **1 no.** * Tail lamp: **2 nos.** * Rear reflector: **1 set** * Light bar with two revolving lights, siren & public address system: **1 set** * Grease gun: **1 no.** * The battery unit should be fitted below the cabin near the front wheel with sliding frame as per the direction of the client. * Original tool kit as supplied with chasis should be supplied along with the fire vehicle * 25kgs ABC dry chemical power: 2 units installed at the rear two side of the lockers cabin with trolley mounting and standard hose. |
| 3 | Firefighting equipment |  |
| i. | Suction hose | IS 2410, 100mm ID, 2.5m length with coupling as per IS 902: **4 nos.** |
| ii. | Extension ladder | Aluminium, 10.5m length, IS 4561-marked: **1 no.** |
| iii. | Metal suction strainer | IS 907-1965 marked: **2 nos.** |
| iv. | Basket strainer | Conforming to IS 358:1966: **2 nos.** |
| v. | Suction wrench | IS 4643: **4 nos.** |
| vi. | Fire bell | Fitted, hand operated IS 924-1984: **1 no.** |
| vii. | Nozzle | Fast action nozzle, NI:170: **2 nos.** |
| viii. | RRL hoses | IS 636 with 2 ½ inch couplings bounded, having length of 25m each: **10 nos.** |
| ix. | Foam making branch | FB 4mm with pick up tube, IS 20: **1 no.** |
| x. | Fire axe large | IS 70: **2 nos.** |
| xi. | Spade | **2 nos.** |
| xii. | Pic axe | IS 273: **1 no.** |
| xiii. | Crowbar | IS 704: **1 no.** |
| xiv. | Sledge hammer | 6.5kg, IS 841**: 1no.** |
| xv. | Adjustable spanner | 30cm long handle, IS 6149: **2 nos.** |
| xvi. | Fire hook | IS 927: **4 nos.** |