

**Major Product category :Motor Vehicles - UNSPSC Code 2510,**

**Sub Category : Safety & rescue vehicles- UNSPSC Code : 251017**

**Ultra High Pressure Mini Fire Tender : UNSPSC Code - 25101701**

S.No.	Parameters		Value 1	Value2	Value 3	Value 4	Value 5	Validation	Remarks	Unit		
<b>Generic</b>												
1	Ultra High Pressure Mini Fire Tender for fire brigade use	Ch	The UHP Mini Fire Tender shall be fabricated on suitable LCV cab. Chassis shall be procured by the vendor. The chassis will have a min. of 90 BHP & shall be a turbo charged, 2 WD (Rear wheel drive), 6 wheeled chassis.							M		
2	Requirement regarding Chassis Cabin Ultra High Pressure Mini Fire Tender for fire brigade use	Ch	Cabin: The driver's cabin shall be the original cabin supplied by the chassis manufacturer. This will accommodate 1 driver & 1 leading Fireman. The second cabin shall be fabricated by the superstructure manufacturer & will accommodate 3 firemen. It will have 2 doors. The seats shall be properly upholstered with good quality material. The body shall be made of a min. of 2mm thick MS pressed sections, tubes, angles, etc. The complete structure shall be first zinc plated & then epoxy painted for complete corrosion resistance. The crew cabin shall be externally paneled with 3mm & internally paneled with 2mm aluminum sheets. A good insulation material shall be sandwiched between internal & external panels for enhanced heat resistance. Flooring shall be of min. 2mm aluminium chequered plates. Doors shall have sliding type powder coated windows.								M	
3	Water Tank capacity of Water Tender (water tank capacity depending upon the type of chassis used)	N	2000	2200		2500			G	Litres		
<b>Cabin and Chassis</b>												
1	Make of Chassis	Ch						TBD		M		
2	Chassis Model No.	Ch						TBD		M		
3	Type of Fuel	Ch	Diesel							F		
4	Vehicle Emission Compliance	Ch	BS-IV							M		
5	Engine Power BHP@rpm	Ch	≥90 BHP					TBD		M	<u>BHP@rpm</u>	
6	Engine Torque Max,@ rpm	Ch						TBD		M	<u>N-M@rpm</u>	

7	Fuel Tank Capacity	N	≥100		TBD	M	Ltrs
8	Length of Chassis	N			TBD	M	mm
9	Width of Chassis	N			TBD	M	mm
10	Height of Chassis	N			TBD	M	mm
11	Gradeability of Chassis( %)	N	≥27%		TBD	M	%
12	Ground Clearance	N	≥ 210mm		TBD	M	mm
13	Wheel Base	N	≤ 4.50 meter		TBD	M	mm
14	Gross vehicle mass including crew, water and equipment	N	≤11000		TBD	G	Kg
15	Chassis Transmission System	Ch	Fully Automatic with torque converter	Manual Transmission with clutch		G	
16	No of Speed/ Forward Gears	N	NA for Automatic Transmission	4-5 speed with Manual Transmission		F	
17	Type of Steering	Ch	Power	Tilt & Telescopic manual		F	
18	Turning Circle Diameter	N	≤ 20 meter		TBD	M	mm
19	Braking System	Ch	Hydraulic Brake	Pneumatic Brakes		F	
20	Side View Mirror	Ch	Yes			M	
21	Low Fuel warning Light	Ch	Yes			M	
22	Standard Spare wheel and Tool Kit	Ch	Yes			M	
<b>Constructional Details of Fire Tender</b>							
1	Overall Width	N	≤ 2 Mtrs.			M	meter

2	Seating Capacity in the driver's cabin cum crew compartment	N	TOTAL - 5 The crew shall have individual seating, with each seat fitted with brackets for placement of Breathing Apparatus in an upright position (total 5 seats). The seats shall be of the wear & walk away type so that when the crew disembarks from the vehicle the BA sets shall easily come off the seats with them. The seat bottom will be theatre type, which will automatically flip up when the fireman gets up, thereby freeing up space for easy embarking & disembarking. The seats shall have integrated seat springs to isolate shock while in motion. They shall have a fixed type, seat-back recline, to improve rider comfort & an auto-pivot & return headrest for rapid seat egress. All seats shall have right shoulder seat belt release. All glasses shall be protected by heavy gauge 1 sq. inch wire-mesh.			M	nos
3	Doors provided on each side of driver's cabin with hinged opening outward ,hung forward with catch locks and flush type handles	N	2			M	nos
4	Construction of Cab and Lockers	Ch	all metal construction with sufficient rigidity and reinforcement and shall be kept as light as possible in mass. Pressed' sections of sufficient strength shall be used for the superstructure			M	
5	Lockers to secure stowage of all equipments	Ch	Reputed international quality roller shutters with OEM locking and lighting systems. The height of the lockers from the bottom to the top of the opening shall be not less than 600 mm.			M	
6	Internal automatic lighting arrangement with the meter switch in the cab for lockers	Ch	Yes			M	
7	Locker Doors	Ch	The doors of the. Lockers shall have sufficient means for holding them closed by efficient flush fitting spring loaded lockers. The doors of the side lockers shall not be hinged at the bottom.			M	
8	Ladder Gallows with locking arrangements for ladder when stowed	Ch	yes			M	
9	Length of aluminium extension ladder	N	7.5			M	mtr
10	Tool-Kit Container		A specially fitted recessed tray for the normal kit of tools, carried on the appliance shall be provided			M	
11	Water Tank and Baffel Plates Material	N	Mild Steel	Stainless Steel gr-316		F	mm
12	Thickness of Water Tank Sheet including of Baffel Plates	N	4.0mm			M	mm

13	Relevant surface treatment /paint details for inner surface ensuring the potability of water as per IS	Ch	The basic structure material shall be zinc plated & thereafter it shall be prepared by grinding the welded surfaces, priming the finished material with a zincrich primer & then finally coated with a two pack epoxy paint. Once panelling is completed, all outside surfaces shall be painted with good quality paint. This shall be poly-urethane (PU) based paint with a life of min. 10 years. The chassis & body shall be under coated with 2 coats of anticorrosive paint.				M	
14	Size of square Channel for body of main structure	N	32.0mm X 1.6mm				M	mm
15	Base Frame Structure	N	Mild Steel	Stainless Steel	Extruded Aluminum		F	mm
16	Exterior and Interior Panel thickness of aluminium sheet for side body and roof	Ch	$\geq 1.6$ mm (min.)			TBD	M	mm
17	Thickness of Flooring Made from Aluminium Chequered sheet	N	2.0mm				M	mm
18	Glasses:- Front wind screen, rear glass in two pieces (toughened type glass as per CMVR) Window with lock cum handle	Ch	Yes				M	
19	Top portion of fixed glass window & bottom portion in two halves in sliding pattern	Ch	Yes				M	
20	Standard automobile paint to the exterior body as per CMVR for Fire Tender	Ch	Yes				M	
21	Front Bumper Hook	Ch	Yes				M	
22	Rear Hook	Ch	Yes				M	

**Water Tank Fabrication**

1	Water Tank	N	The tank material shall be completely zinc plated & finally epoxy coated for added corrosion resistance. A 450 mm dia manhole at the top and a cleaning hole of dia 250 mm at bottom of the tank shall be provided . A male coupling shall be provided near the pump for water replenishment from an outside source. The tank would have a drain valve of 50mm dia. A 25mm connection shall be provided at the top of the tank centre, to enable the water to flow out from the top. All the piping & flanges of the pump & tank shall be of SS. All valves used shall be of SS IC. 2 nos Baffle plates shall be provided to ensure that there is min. hammering due to cornering or braking. The tank side plates shall be die-pressed for added strength & torsion resistance. The tank shall be rigidly mounted on the chassis & shall be provided with lifting eyes for maintenance & repairing.			TBD	M	
2	Water level indicator for the tank	Ch	Dial gauge water level indicator for the tank in the driver cabin	visual level gauge of glass tube shall be provided at the control panel calibrated 1/4, 1/2, 3/4 and full	Electronic LED indicator in control panel and driver cabin		Multiple Select	
<b>Equipments and Accessories</b>								
1	High Pressure Pump Type	Ch	Plunger type positive displacement pump having synthesized pistons of super-hard ceramic, working to its capacity at not more than 1000 RPM.				M	
2	High Pressure Pump Capacity		150 LPM at 100 bar				M	
3	By Pass for water		A by-pass for letting the water back to the suction intake shall be provided to release excess pressure generated due to shutting of the hand lines or while discharging from only one of the two outlets (75 LPM @100 bar) individually.				M	
4	Minimum guaranteed life of Pump		5000 hours or 5 years of operation whichever is earlier.				M	
5	Double seal on each plunger with low pressure intermediate chamber to keep the water seals cool & lubricated		yes				M	
6	Facility for recirculation of any leakage from the high pressure back to the pump inlet		yes				M	
7	Material for connecting rods		special alloys with low attrition coefficient, high wear resistance & high anti-seize properties.				M	

8	The hydraulic structure shall be designed to simplify scheduled maintenance procedures like gasket & valve replacement		yes		M	
9	Inline mesh filters for suction line	Ch	yes		M	
10	Hose		16 mm inner diameter two hoses of 60 m length each		M	
11	Hose Type		R2 type & rated for a min. of 250±2 bar working pressure		M	
12	Hose Reel & Fog & Jet Gun (2 Nos each)		The reels shall be constructed of cast aluminum alloy & will have a geared winding mechanism provided at the rear of the appliance. The reels shall be capable of being wound without undue strain on the operator. At the discharge ends of both the hose reels with the high-pressure fog guns each to be capable of discharging 75 LPM @100 bar in jet or fog patterns.		M	
13	Throw distance for Gun		Jet range minimum 23meters & fog of 50 microns water droplets at 45° angle.		M	
14	Instruction Books covering detailed drawing of the body, showing the details of construction, water tank drawing showing baffle arrangement, mounting arrangement of all fitments on the appliance, PTO mounting drawing etc	Ch	to be provided to buyer on demand		M	
15	PTO Unit	Ch	A gearbox mounted PTO shall be installed for operating the pump. This PTO shall be of a proper gear ratio to drive the pump at required RPM without loss of power & prevent the engine from overheating. The PTO shall be of suitable make as per the recommendations of the transmission Chassiss manufacturer. Cooling system (if required) shall be provided to maintain operating temperature of the PTO.		M	
16	Instruments & Controls	N	Adequately illuminated pump control panel shall be provided on the appliance housing the RPM meter & panel light. The panel shall be compact & have the following additional controls & gauges: 1. Pump pressure gauge. 2. RPM Meter. 3. Auxiliary throttle control. 4. Panel light. 5. Plastic tube type level gauge. 6. Pressure regulator.		M	

17	Light Mast	N	Light Mast: A pneumatically operated willburt light mast shall be fitted on the vehicle at a suitable place. The mast shall have minimum extension of 5 meters and shall be fitted with 2 DC operated LED lights in weather tight fittings (minimum IP 68 protection). The lights shall be dust & immersion test certified, LED based of minimum 230 watts and 30,000 lumen output, instant on/off with no warm up time, and minimum 50,000 hour service life. The mast shall have an internal spiral wire cable, withstand a wind speed of minimum 110 km/ph and the lights shall be controlled independently.		M	
18	Accessories & Equipment:	Ch	Accessories & Equipment: The vehicle shall be delivered with the following accessories & equipment:  1. Three piece extension Ladder 7.5 Mtrs 2. Two Piece halogen Fog lights installed on the front cab. 3. One unit of Hooligan tool. 4. Two 16 mm dia. Poly-propylene ropes of 30 meters length each. 5. One LED light bar with 100 Watt hooter & PA system. 6. Handheld LED torches 100m range - 2 units. 7. Leather Gloves (full size) - 6 pairs 8. Shock resistant gloves (full size) - 5 pairs		M	
19	Workmanship & Material	Ch	Workmanship executed shall be of the highest order. All rivets & bolt holes will have a coat of approved paint on both surfaces before riveting or bolting or welding. All steel screws, bolts, nuts, rivets etc. shall be zinc coated or will have rust proof coats by a recognized process. The roof joints shall be subjected to rigid water test at our works in presence of purchaser's representatives. All directions & instructions on all points related to the fabrication shall be executed whenever given by the purchaser's representative for quality & workmanship. All the material used in the fabrication of the body work shall be of good quality or approved make & type. All equipment & material will comply with the requirements of the latest relevant IS specifications. No welding shall be done on the chassis.		M	
20	Spare Parts availabilty	Ch	Spare parts for the above vehicles shall be available as & when required for a minimum period of 10 year from the date of supply.		M	
21	Rear Reflectors	Ch	Yes		M	
22	Public Address System - battery operated system with mike in the driver's cab and speaker on the top bf the vehicle	Ch	Yes		M	

23	Manufacturer's name or trade-mark on Fire Tender	Ch	Yes		M	
24	Marking for Capacity of the water tank in Litres on fire Tender	Ch	Yes		M	
25	Marking for Year of Manufacture on Water Tender	Ch	Yes		M	
<b>Performance</b>						
1	Gradeability or Capability of fire tender of being started from rest and move upon a gradient of 1 to 4	Ch	Yes		M	
2	Articulation	Ch	vehicles shall be tested for articulation (200mm alternate gradients & will not show any signs of stress during this test. Also the clearances in the wheel wells shall be checked for tolerances.		M	
3	Waterproofing (Shower Test ) as per IS 11865	Ch	must conform		M	
4	Performance of Brakes as per CMVR	Ch	Yes		M	
5	Stability of Complete Fire tender	Ch	The stability of the appliance shall be such that when under fully equipped and loaded condition ( but excluding crew),if the surface on which the appliance stand is tilted to either side, the point at which over-turning occurs is not passed at an angle of 27 degrees from the horizontal.		M	
6	Acceptance Tests at consignee end	Ch	Yes, Vehicle Performance and Pump Performance to be tested at duty point for 4 hours without replenishment or change in fuel/ water/lubricants of the vehicle. Only water to be filled in the main water tank.		M	
<b>Certification</b>						
1	Warranty Time	N	3		M	years
2	Battery Warranty as per Battery OEM	N		TBD	M	years
3	No. Of Free Service	N			M	
4	Complete Fire Tender including Chassis, PTO and Body approval from ARAI / VRDE / ICAT	N	Yes	No	F	
5	Vehicle / Chassis Certification including form 22A / ARAI / VRDE / ICAT	Ch	Yes		M	